LINSCOTT LAW & GREENSPAN engineers

REVISED TRAFFIC IMPACT ANALYSIS

207 EAST SEASIDE WAY APARTMENTS PROJECT

Long Beach, California
February 19, 2015

Prepared for:

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and

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207 EAST SEASIDE WAY APARTMENTS PROJECT

Long Beach, California
February 19, 2015

1.0 INTRODUCTION

This Traffic Impact Analysis report addresses the potential traffic impacts and circulation needs associated with the development of the 207 East Seaside Way Apartments Project (hereinafter referred to as Project). The Project site is a 0.67± acre rectangular-shaped parcel of land, now developed with surface parking spaces that is located north of Seaside Way between Locust Avenue and Collins Way in the City of Long Beach, California. The project site is located in the Downtown Shoreline Planned Development District (PD-6).

This report documents the findings and recommendations of a traffic impact analysis, conducted by Linscott, Law & Greenspan, Engineers (LLG) to determine the potential impacts associated with the proposed Project.

1.1 Scope of Work

The traffic analysis evaluates the existing operating conditions at eight (8) key study intersections within the project vicinity, estimates the trip generation potential of the proposed Project, and forecasts future operating conditions without and with the Project. Where necessary, intersection improvements/mitigation measures are identified to offset the impact of the proposed Project. This traffic report satisfies the traffic impact requirements of the City of Long Beach and is consistent with the requirements and procedures outlined in the most current *Congestion Management Program (CMP) for Los Angeles County*. The Scope of Work for this report, which is included in ***Appendix A,*** was developed in conjunction with City of Long Beach Traffic Engineering staff.

The Project site has been visited and an inventory of adjacent area roadways and intersections was performed. Existing peak hour traffic information has been collected at the eight (8) key study locations on a "typical" weekday for use in the preparation of intersection level of service calculations. Information concerning cumulative projects (planned and/or approved) in the vicinity of the project has been researched at the City of Long Beach. Based on our research and updated information provided by the City, ten (10) cumulative projects were considered in the cumulative traffic analysis for this project.

Based on City of Long Beach requirement's, this traffic report analyzes existing and future (near-term) weekday AM and PM peak hour traffic conditions for existing and Year 2017 traffic conditions without and with the proposed Project. Peak hour traffic forecasts for the Year 2017 horizon year have been projected by increasing existing traffic volumes by an annual growth rate of one percent (1.0%) per year and adding traffic volumes generated by ten (10)cumulative projects.

1.2 Study Area

The key area intersections evaluated in this report provide both regional and local access to the study area. The study intersections were selected in coordination with the City of Long Beach Traffic Engineer and consist of the following:

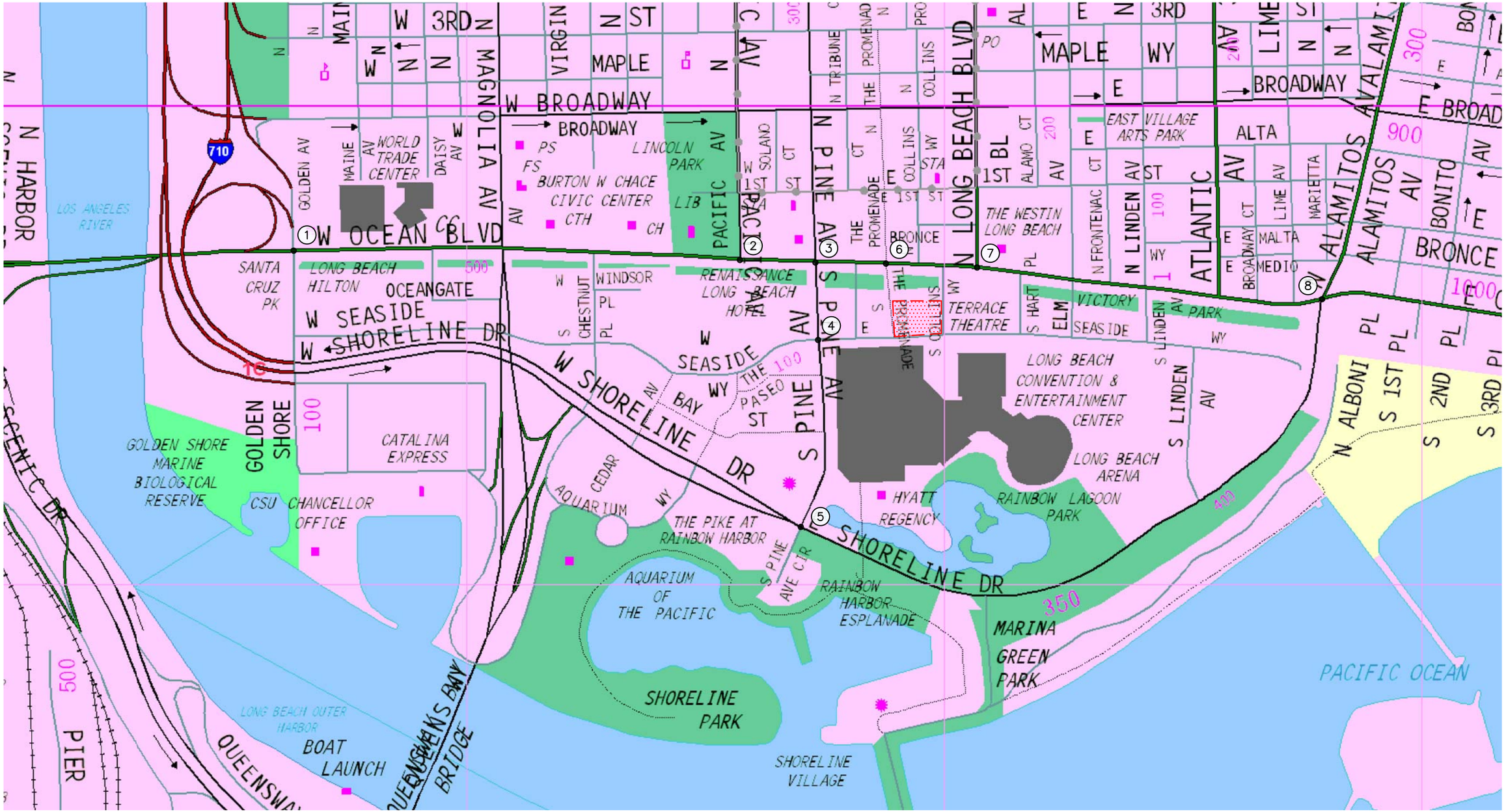
1. Golden Shore at Ocean Boulevard
2. Pacific Avenue at Ocean Boulevard
3. Pine Avenue at Ocean Boulevard
4. Pine Avenue at Seaside Way
5. Pine Avenue at Shoreline Avenue
6. Locust Avenue at Ocean Boulevard
7. Long Beach Boulevard at Ocean Boulevard
8. Alamitos Avenue/Shoreline Drive at Ocean Boulevard[1]

Figure 1-1 presents a Vicinity Map, which illustrates the general location of the project and depicts the study locations and surrounding street system.

Level of Service (LOS) calculations for the AM and PM peak hours at these key study intersections were performed to evaluate the future potential traffic impacts associated with anticipated area growth, cumulative projects and the proposed Project. Included in this traffic study report are:

- Existing traffic counts,
- Estimated project traffic generation/distribution/assignment,
- Estimated cumulative project traffic generation/distribution/assignment,
- AM and PM peak hour capacity analyses for existing conditions,
- AM and PM peak hour capacity analyses for existing plus project conditions,
- AM and PM peak hour capacity analyses for future (Year 2017) conditions without and with project traffic,
- Site Access Evaluation,
- Recommended Improvements, and
- Congestion Management Program Compliance Assessment.

[1] Los Angeles County CMP Intersection No. 33.



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N NO SCALE

KEY

(#) = STUDY INTERSECTION

= PROJECT SITE

FIGURE 1–1

VICINITY MAP

207 EAST SEASIDE WAY APARTMENTS PROJECT, LONG BEACH

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2.0 PROJECT DESCRIPTION

The Project site is a 0.67± acre rectangular-shaped parcel of land, now developed with surface parking spaces that is located north of Seaside Way between Locust Avenue and Collins Way in the City of Long Beach, California. The project site is located in the Downtown Shoreline Planned Development District (PD-6). ***Figure 2-1*** presents an existing aerial of the Project site.

Table 2-1 presents the development summary for the proposed uses of the Project. As shown, the proposed Project will consist of a five story apartment podium with a total of 113 apartment homes consisting of 53 studio units, 33 one-bedroom/1 or 1.5 bath units, and 27 two-bedroom/2 bath units over a three-level garage with a total of 144 parking spaces. An additional 32 spaces will be provided off-site for use by the Project. On-site facilities/amenities of the proposed Project include a leasing office, a lounge/lobby, a fitness center for residents, flex space that may include a café' and/or ancillary retail shop space on the upper level (Promenade) and a roof top deck with spa, fire pits and barbeque areas. The Project is expected to be completed by the Year 2017 and is assumed to be completed in one phase.

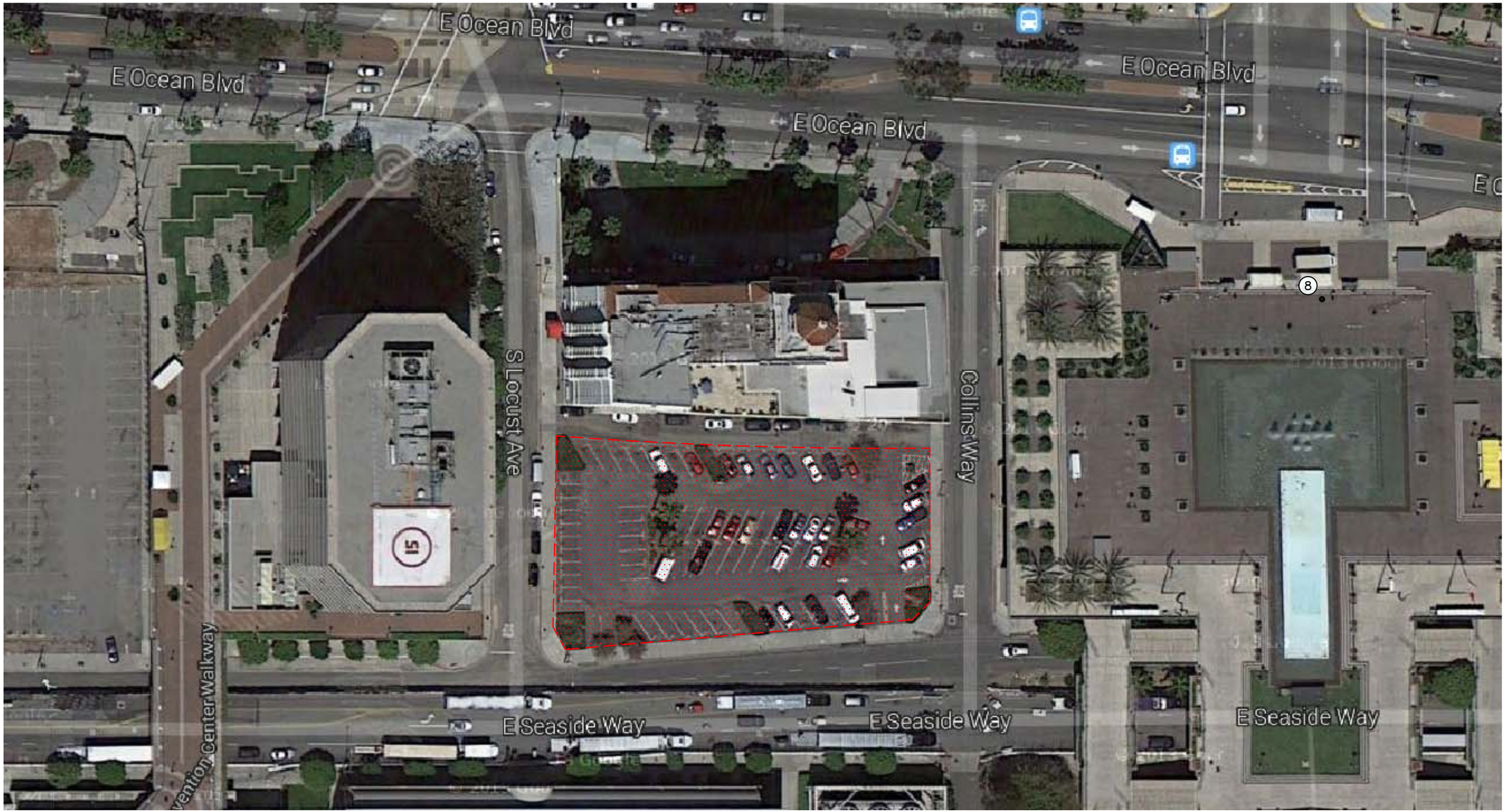
Figure 2-2 presents the overall site plan for the proposed Project as prepared by StudioTSQ dated September 2014. ***Figure 2-3*** presents the street level of the proposed Project, illustrating the proposed access point along Locust Avenue for residents and guest to access the second level of the garage.

2.1 Site Access

Access to the proposed project site will be provided via one full access, gated unsignalized driveway located along Locust Avenue.

2.2 Pedestrian Circulation

Pedestrian circulation would be provided via existing public sidewalks along Ocean Boulevard, Seaside Way, Locust Avenue and Collins Way within the vicinity of the project frontage, which will connect to the Project site. The proposed Project will protect the existing sidewalk along project frontage and if necessary repair or reconstruct sidewalks along the project frontage per the City's request. The existing sidewalk system within the project vicinity provides direct connectivity throughout downtown Long Beach, inclusive of the Long Beach Transit Mall located on 1st Street, between Pacific Avenue and Long Beach Boulevard. From the Project site on 207 East Seaside Way, it would take approximately 5 minutes to walk to the Long Beach Transit Mall that is 0.25 miles from the site. In addition to the existing sidewalk system in the project vicinity, a pedestrian bridge/promenade is proposed to be constructed along the project's frontage on Seaside Way that will connect the first level of the apartment podium to the existing development to the east of Collins Way and west of Locust Avenue.



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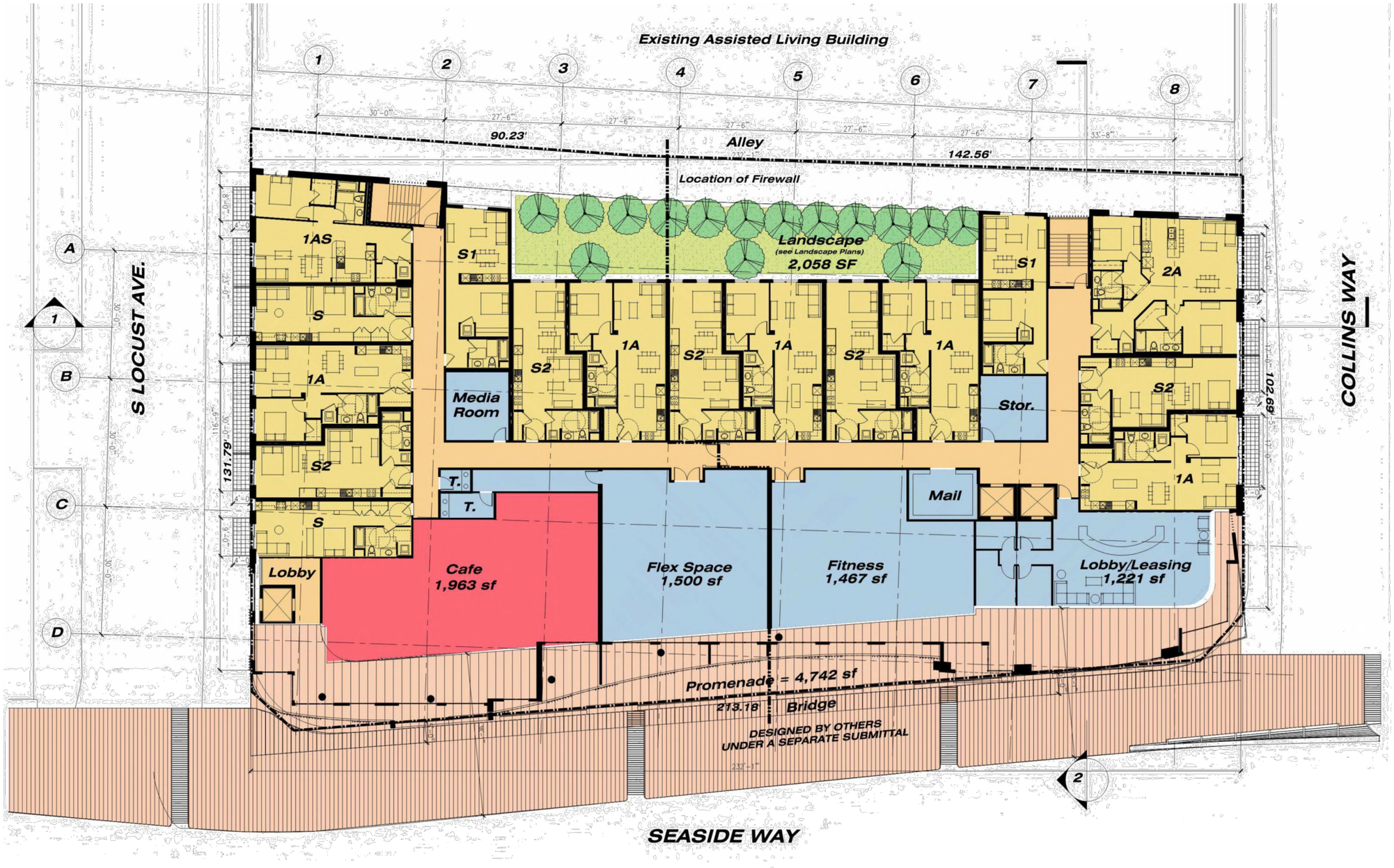
N NO SCALE

KEY
= PROJECT SITE

FIGURE 2-1

EXISTING SITE PLAN
207 EAST SEASIDE WAY APARTMENTS PROJECT, LONG BEACH



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SOURCE: STUDIO T-SQ ARCHITECTURE

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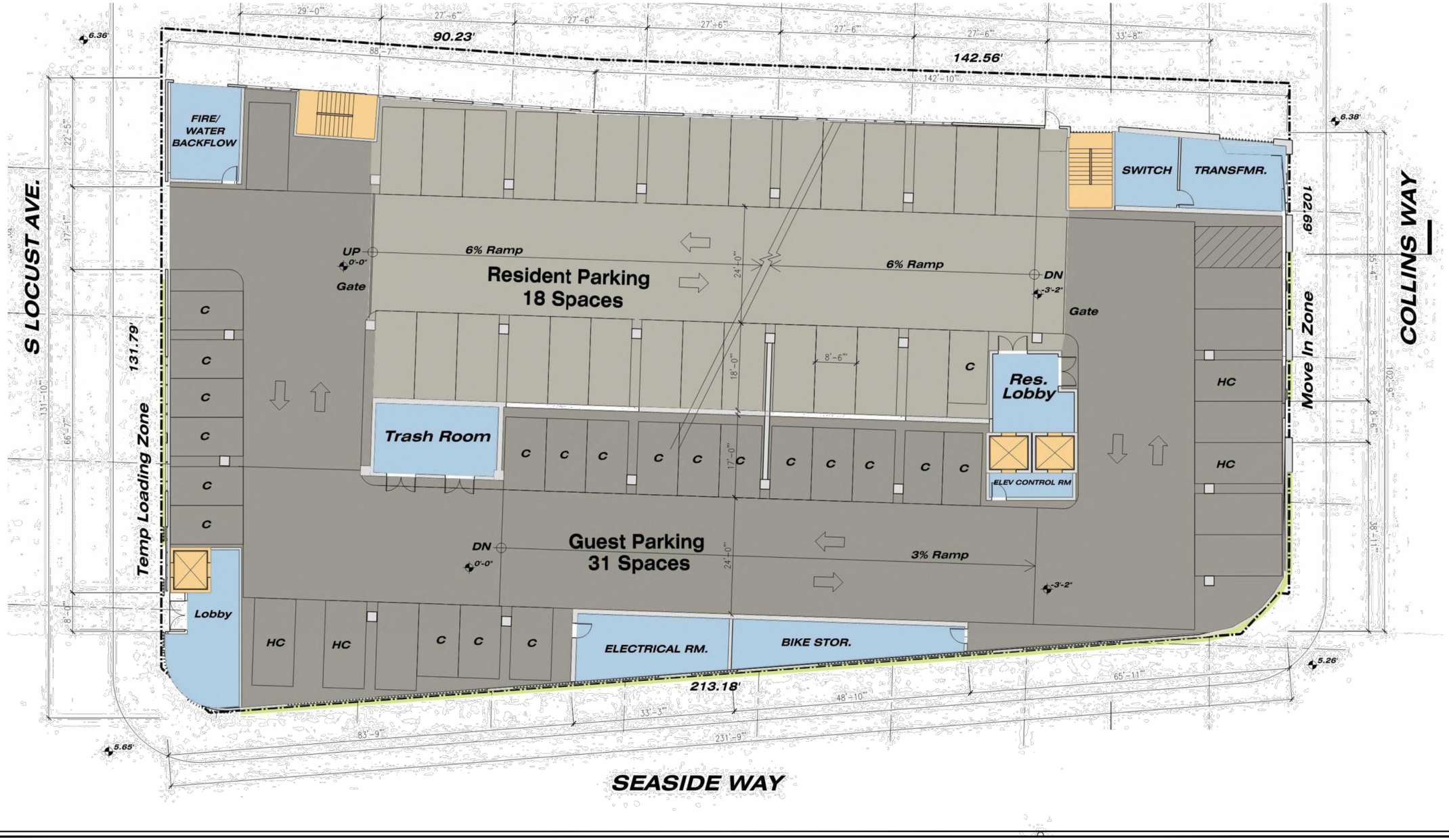
FIGURE 2-2

PROPOSED SITE PLAN
207 EAST SEASIDE WAY APARTMENTS PROJECT, LONG BEACH



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SOURCE: STUDIO T-SQ ARCHITECTURE

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FIGURE 2-3

PROPOSED SITE PLAN - STREET LEVEL

207 EAST SEASIDE WAY APARTMENTS PROJECT, LONG BEACH

TABLE 2-1

PROJECT DEVELOPMENT SUMMARY[2]

Land Use / Project Description	Proposed Development Totals
❑ Studio (515 SF – 690 SF)	53 Units
❑ 1 Bedroom Units (769 SF – 919 SF)	33 Units
❑ 2 Bedroom Units (938 SF – 1,205 SF)	27 Units
Total Units:	***113 Units***
❑ Parking Supply	
o 3-level parking Structure	144 spaces
o Off-Site Parking	32 spaces
Total Supply	***176 spaces***

[2] Source: Studio T Architecture, September 2014 plan set for 207 E. Seaside Way

3.0 EXISTING CONDITIONS

3.1 Street Network

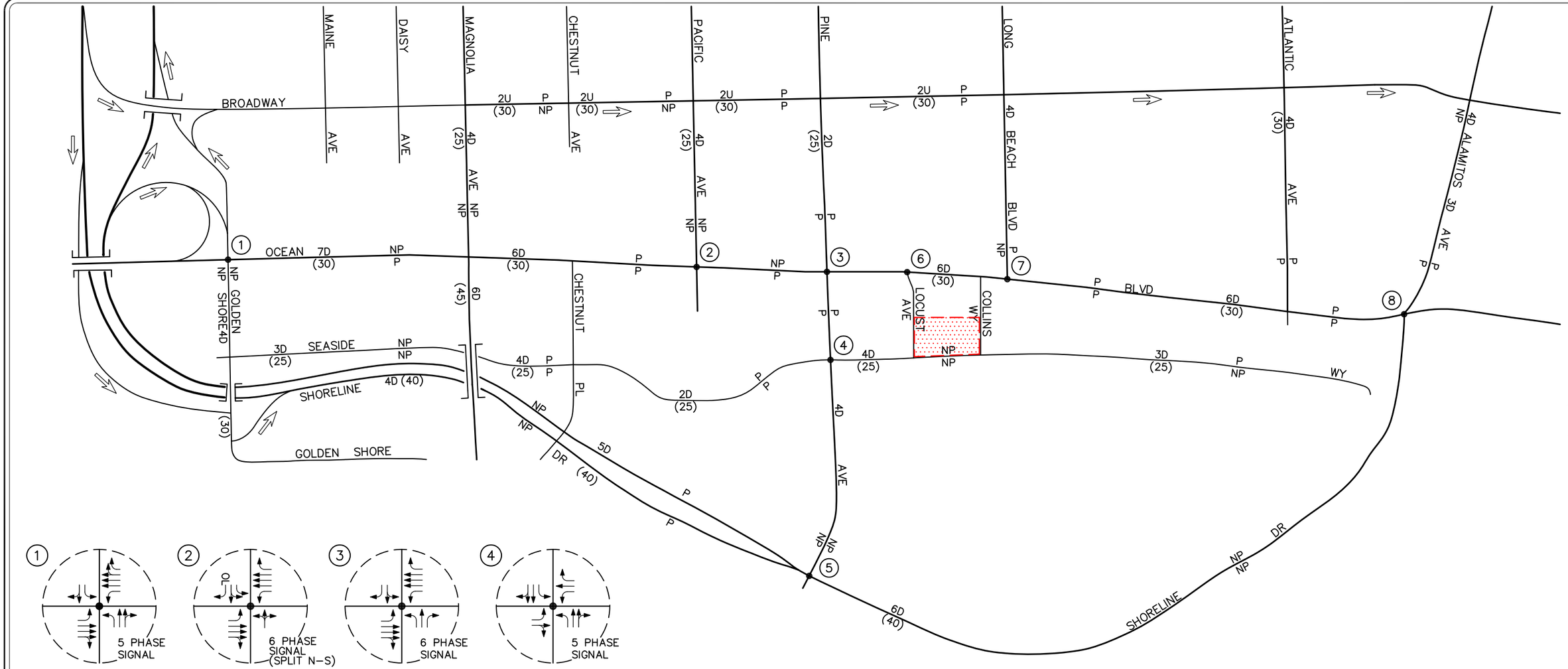
The principal local network of streets serving the proposed Project includes Ocean Boulevard, Seaside Way and Locust Avenue. The following discussion provides a brief synopsis of these key area streets. The descriptions are based on an inventory of existing roadway conditions.

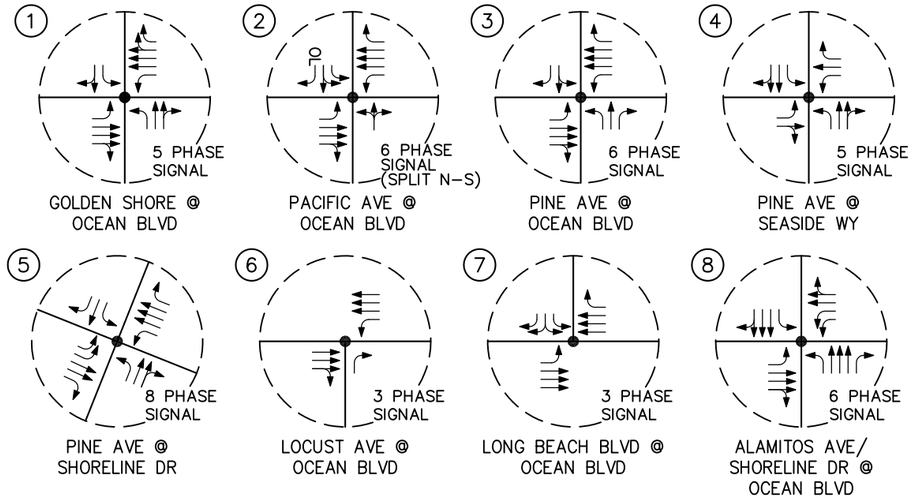
Ocean Boulevard is a seven-lane, divided roadway between Golden Shore and Magnolia Avenue and a six-lane, divided roadway east of Magnolia Avenue, oriented in the east-west direction. The posted speed limit along Ocean Boulevard is 30 miles per hour (mph) in the vicinity of the proposed Project. On-street parking is generally permitted along Ocean Boulevard in the vicinity of the proposed Project, except on the north side of Ocean Boulevard west of Magnolia Avenue and except on the north side of Ocean Boulevard between Pacific Avenue and Pine Avenue. Traffic signals control the key study intersections of Ocean Boulevard at Golden Shore, Pacific Avenue, Pine Avenue, Locust Avenue, Long Beach Boulevard and Alamitos Avenue/Shoreline Drive.

Seaside Way is a three-lane, divided roadway west of the Queens Way Bridge, a four-lane, divided roadway between the Queens Way Bridge and Chestnut Place, a two-lane, divided roadway between Chestnut Place and Pine Avenue, a four-lane, divided roadway between Pine Avenue and Collins Way and generally a three-lane divided roadway east of Collins Way, oriented in the east-west direction. Seaside Way borders the project site to the south. The posted speed limit along Seaside Way is 25 mph in the vicinity of the proposed Project. On-street parking is generally prohibited along Seaside Way west of the Queens Way Bridge and generally permitted between the Queens Way Bridge and Pine Avenue. On-street parking is generally prohibited along Seaside Way east of Pine Avenue except on the north side of Seaside Way east of Collins Way. A traffic signal controls the key study intersection of Seaside Way at Pine Avenue.

Locust Avenue is a two-lane, undivided roadway, oriented in the north-south direction. Locust Avenue borders the project site to the west and will provide access to the project site via one full access, gated unsignalized driveway. The prima facie speed limit along Locust Avenue is 25 mph. On-street parking is generally permitted along Locust Avenue in the vicinity of the project. A traffic signal controls the key study intersection of Locust Avenue at Ocean Boulevard.

Figure 3-1 presents an inventory of the existing roadway conditions for the arterials and intersections evaluated in this report. The number of travel lanes and intersection controls for the key area intersections are identified.





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N NO SCALE

KEY

(#) = STUDY INTERSECTION
← = APPROACH LANE ASSIGNMENT
● = TRAFFIC SIGNAL, ⏓ STOP SIGN
P = PARKING, NP = NO PARKING
U = UNDIVIDED, D = DIVIDED
2 = NUMBER OF TRAVEL LANES
(XX) = POSTED SPEED LIMIT (MPH)
F = FREE-RIGHT
OL = RIGHT-TURN OVERLAP
▭ = PROJECT SITE

FIGURE 3-1

EXISTING ROADWAY CONDITIONS AND INTERSECTION CONTROLS

207 EAST SEASIDE WAY APARTMENTS PROJECT, LONG BEACH

3.2 Existing Area Traffic Volumes

Manual vehicular turning movement counts were conducted at the eight (8) key study locations during the weekday morning and evening peak commuter periods to determine the existing AM peak hour and PM peak hour traffic volumes. Traffic counts at the eight (8) key study intersections were conducted in May 2013, October 2013, January 2014 and March 2014 by National Data & Surveying Services and Transportation Studies, Inc. It should be noted that traffic counts were conducted at only three of the eight locations in May 2013 and October 2013 [i.e. the intersection of Pine Avenue at Seaside Way (October 2013), the intersection of Pine Avenue at Shoreline Drive (October 2013) and the intersection of Alamitos Avenue/Shoreline Drive at Ocean Boulevard (May 2013)]. For these three locations, the 2013 AM peak hour and PM peak hour traffic counts were increased by one percent to adjust them to Year 2014 existing baseline conditions.

Figures 3-2 and ***3-3*** depict the existing AM and PM peak hour traffic volumes at the eight (8) key study intersections, respectively.

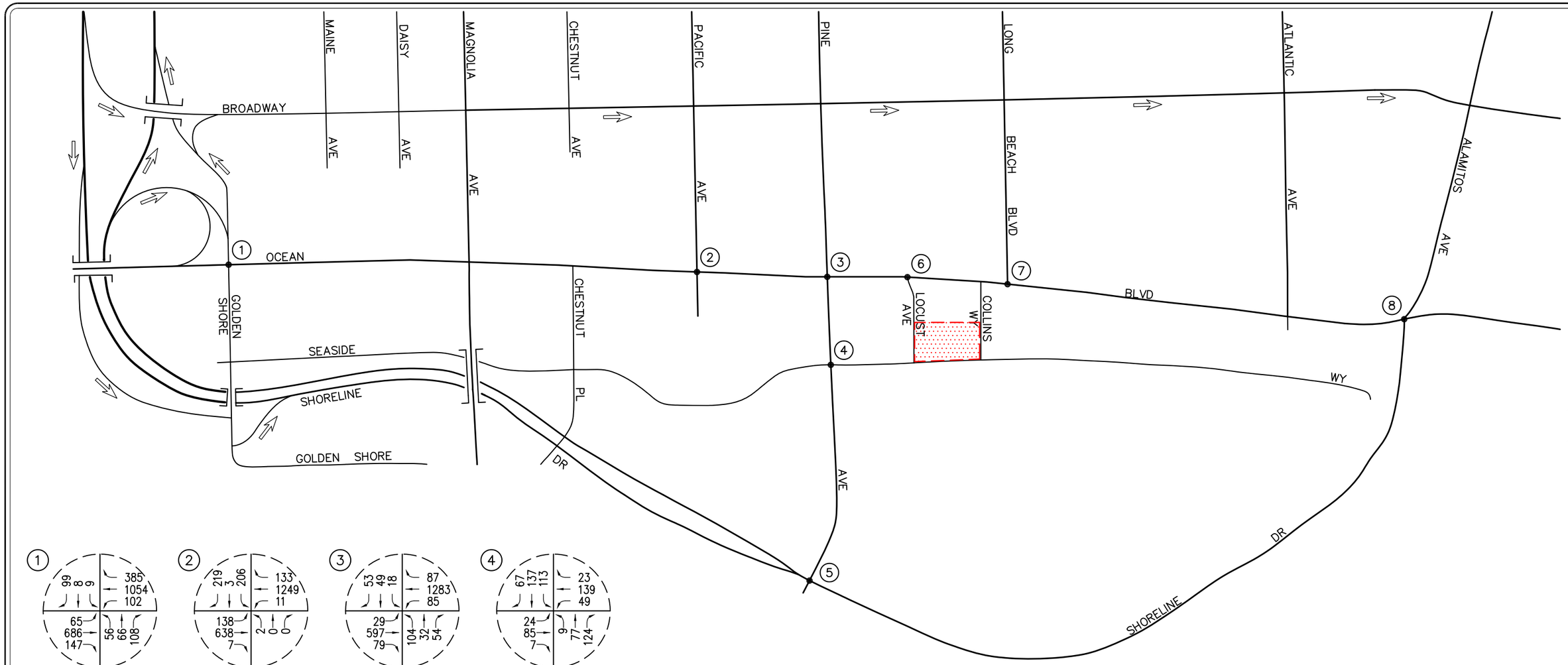
Appendix B contains the detailed manual turning movement count sheets for the key study intersections evaluated in this report.

3.3 Existing Public Transit

The Los Angeles County Metropolitan Transportation Authority and Long Beach Transit (LBT) provide public transit services in the vicinity of the proposed Project. In the vicinity of the Project, the Metro Blue Line and Metro Local Line No. 232 currently serve Long Beach Boulevard, Pacific Avenue and Broadway. The Los Angeles Department of Transportation (LADOT) Commuter Express 142 currently serves Ocean Boulevard. In addition to the Metro routes, LBT Route 51 also serves Long Beach Boulevard. LBT Routes 61, 71 and 72 serve Atlantic Avenue, LBT Route 111 and 112 serve Broadway, Route 181 serves Magnolia Avenue, LBT Route 182 serves Pacific Avenue and LBT Passport Route serves Pine Avenue. ***Figure 3-4*** graphically illustrates the transit routes of Long Beach Transit within the vicinity of the Project site. ***Figure 3-5*** identifies the location of the existing LBT bus stops, including the downtown Long Beach Transit Mall on 1st Street between Pacific Avenue and Long Beach Boulevard, in proximity to the Project site. From the Project site on 207 East Seaside Way, it would take approximately 5 minutes to walk to the Long Beach Transit Mall that is 0.25 miles from the site.

3.4 Existing Bicycle Master Plan

The City of Long Beach promotes bicycling as a means of mobility and a way in which to improve the quality of life within its community. The Bicycle Master Plan recognizes the needs of bicycle users and aims to create a complete and safe bicycle network throughout the City. The City of Long Beach Bicycle Facilities in the vicinity of the Project site (existing and proposed) is shown on ***Figure 3-6***.



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KEY

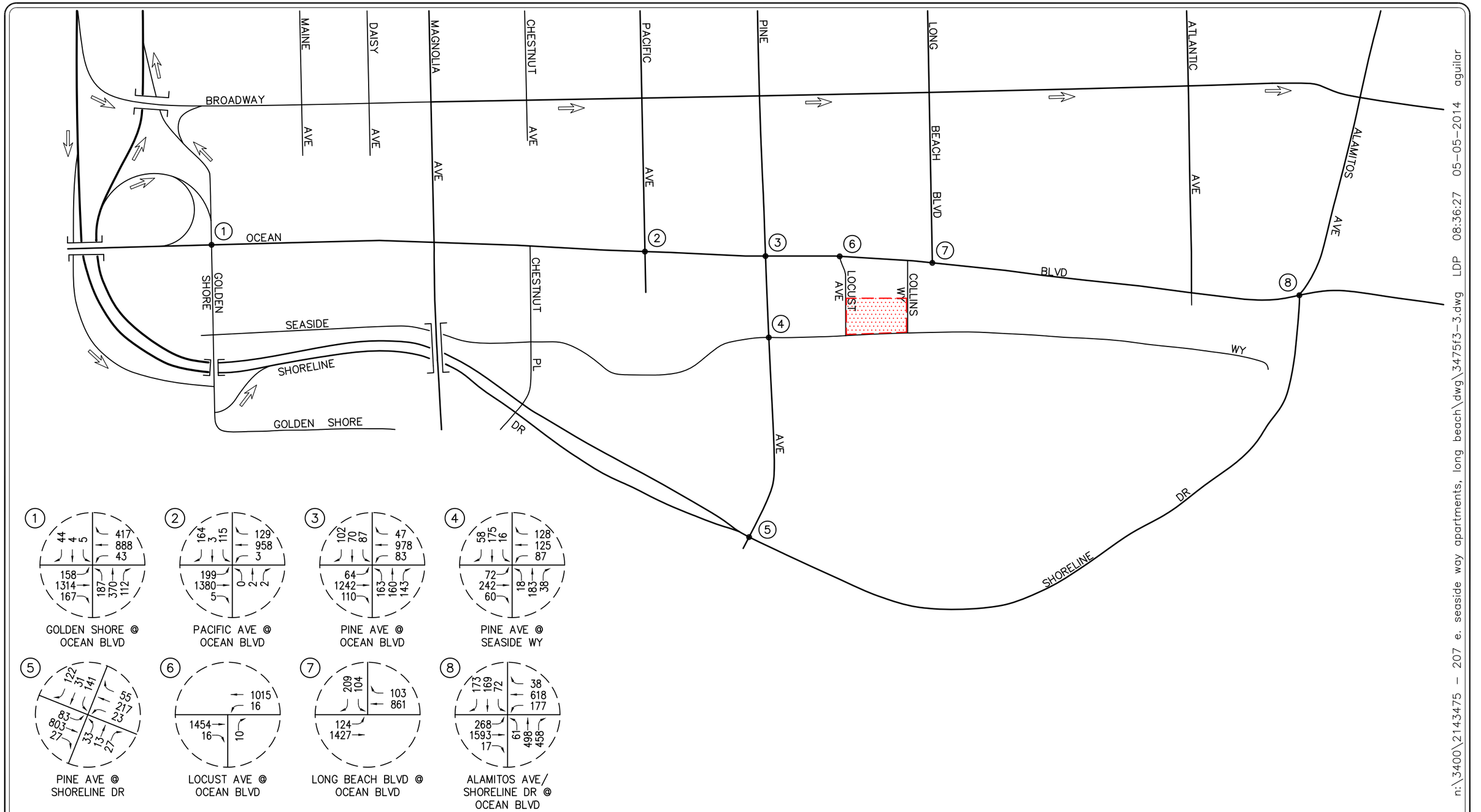
(#) = STUDY INTERSECTION

= PROJECT SITE

FIGURE 3-2

EXISTING AM PEAK HOUR TRAFFIC VOLUMES

207 EAST SEASIDE WAY APARTMENTS PROJECT, LONG BEACH



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KEY

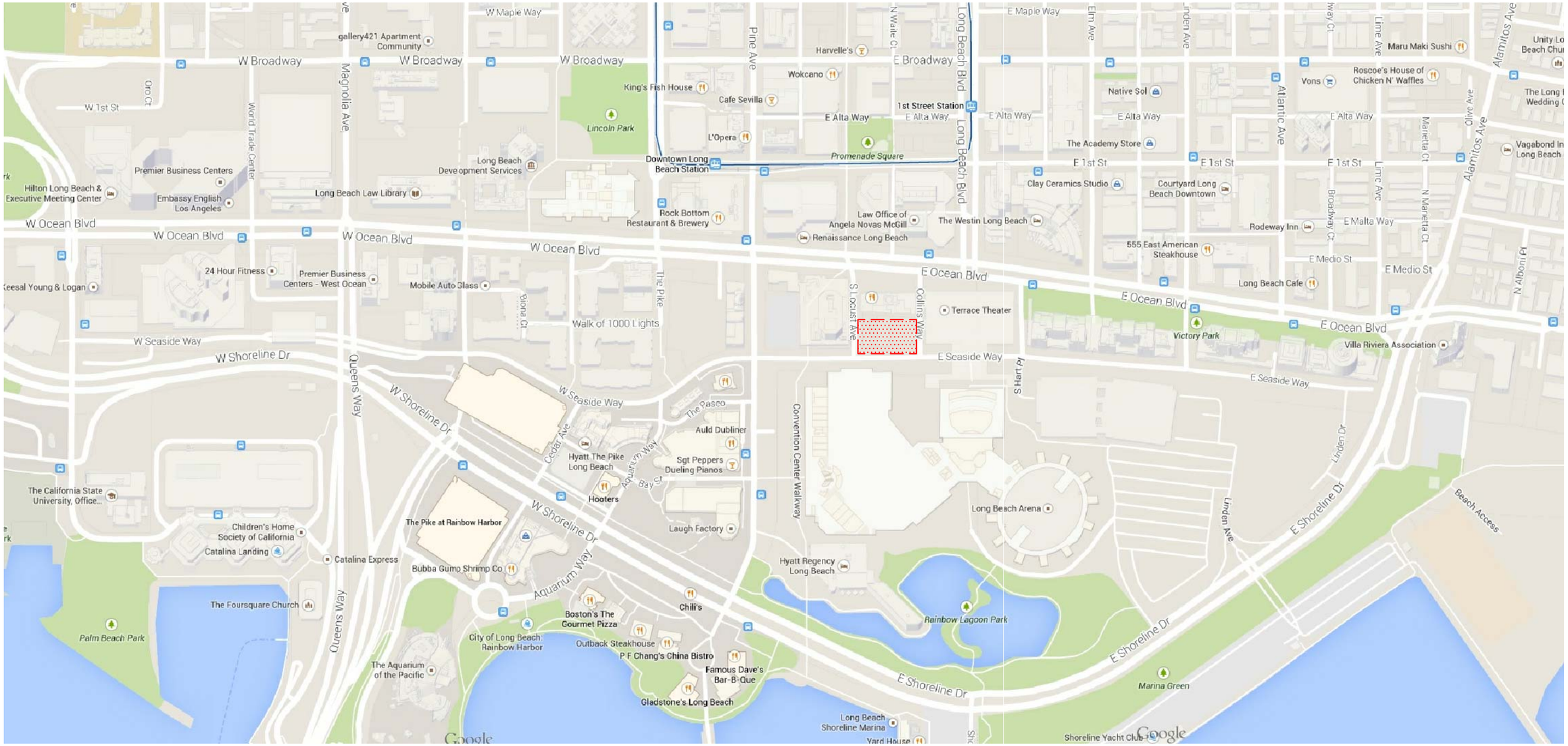
(#) = STUDY INTERSECTION

= PROJECT SITE

FIGURE 3-3

EXISTING PM PEAK HOUR TRAFFIC VOLUMES

207 EAST SEASIDE WAY APARTMENTS PROJECT, LONG BEACH



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SOURCE: GOOGLE

KEY

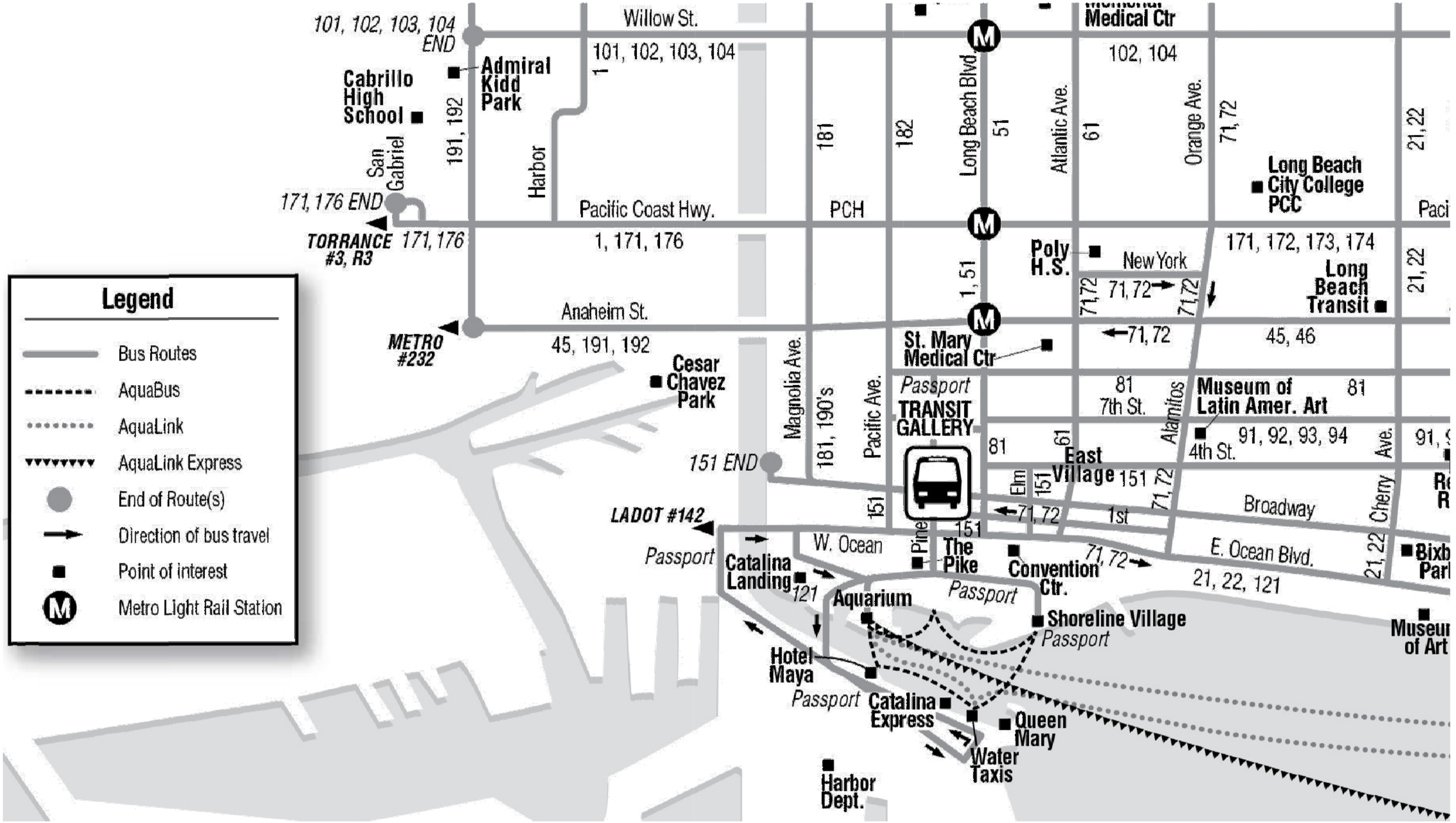
= PROJECT SITE

= TRANSIT STOP

FIGURE 3-4

TRANSIT STOP LOCATIONS

207 EAST SEASIDE WAY APARTMENTS PROJECT, LONG BEACH



SOURCE: LONG BEACH TRANSIT

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FIGURE 3–5

LONG BEACH TRANSIT MAP
207 EAST SEASIDE WAY APARTMENTS PROJECT, LONG BEACH

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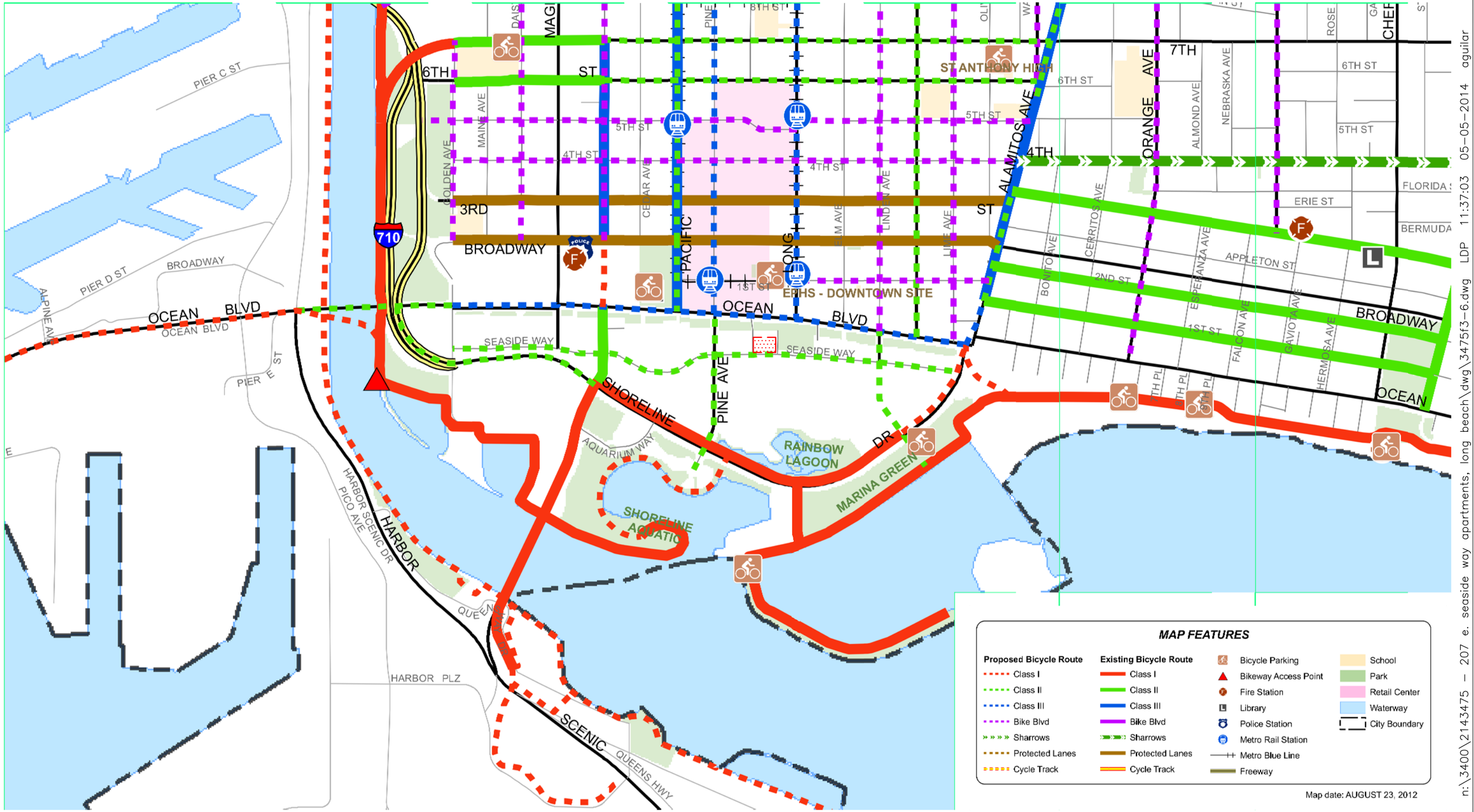

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LINSCOTT LAW & GREENSPAN engineers

N NO SCALE

SOURCE: CITY OF LONG BEACH

KEY

= PROJECT SITE

FIGURE 3-6

LONG BEACH BIKEWAY FACILITIES

207 EAST SEASIDE WAY APARTMENTS PROJECT, LONG BEACH

3.5 Existing Intersection Conditions

Existing AM and PM peak hour operating conditions for the key study intersections were evaluated using the *Intersection Capacity Utilization (ICU) Methodology* for signalized intersections and the methodology outlined in Chapter 17 of the *Highway Capacity Manual 2000 (HCM 2000)* for unsignalized intersections.

3.5.1 *Intersection Capacity Utilization (ICU) Method of Analysis (Signalized Intersections)*

In conformance with City of Long Beach and LA County CMP requirements, existing AM and PM peak hour operating conditions for the key signalized study intersections were evaluated using the *Intersection Capacity Utilization* (ICU) method. The ICU technique is intended for signalized intersection analysis and estimates the volume to capacity (V/C) relationship for an intersection based on the individual V/C ratios for key conflicting traffic movements. The ICU numerical value represents the percent signal (green) time, and thus capacity, required by existing and/or future traffic. It should be noted that the ICU methodology assumes uniform traffic distribution per intersection approach lane and optimal signal timing.

Per LA County CMP requirements, the ICU calculations use a lane capacity of 1,600 vehicles per hour (vph) for left-turn, through, and right-turn lanes, and dual left turn capacity of 2,880 vph. A clearance interval is also added to each Level of Service calculation. Per City of Long Beach requirements, clearance intervals are based on the number of phases in the intersection and whether the left turning movements are all fully protected or whether some of them are permitted with other left-turn movements being protected. ***Table 3-1*** shows the City of Long Beach clearance intervals used in the analysis of the key study intersections.

The ICU value translates to a Level of Service (LOS) estimate, which is a relative measure of the intersection performance. The six qualitative categories of Level of Service have been defined along with the corresponding ICU value range and are shown in ***Table 3-2***. The ICU value is the sum of the critical volume to capacity ratios at an intersection; it is not intended to be indicative of the LOS of each of the individual turning movements.

3.5.2 *Highway Capacity Manual (HCM) Method of Analysis (Unsignalized Intersections)*

The 2000 HCM unsignalized methodology for stop-controlled intersections was utilized for the analysis of the unsignalized intersections. This methodology estimates the average control delay for each of the subject movements and determines the level of service for each movement. For all-way stop controlled intersections, the overall average control delay measured in seconds per vehicle, and level of service is then calculated for the entire intersection. For one-way and two-way stop-controlled (minor street stop-controlled) intersections, this methodology estimates the worst side street delay, measured in seconds per vehicle and determines the level of service for that approach. The HCM control delay value translates to a Level of Service (LOS) estimate, which is a relative measure of the intersection performance. The six qualitative categories of Level of Service have been defined along with the corresponding HCM control delay value range, as shown in ***Table 3-3***.

3.6 Level of Service Criteria

According to the City of Long Beach, LOS D is the minimum acceptable condition that should be maintained during the peak commute hours, or the current LOS if the existing LOS is worse than LOS D (i.e. LOS E of F). Please note that the study intersection of Alamitos Avenue/Shoreline Drive at Ocean Boulevard is a part of the CMPHS of Los Angeles County where LOS E is the minimum acceptable operating condition.

3.7 Existing Level of Service Results

Table 3-4 summarizes the existing peak hour service level calculations for the eight (8) key study intersections based on existing traffic volumes and current street geometrics. Review of Table *3-4* indicates that one of the eight (8) key study intersections currently operates at an unacceptable level of service during the PM peak hour. The intersection of Alamitos Avenue/Shoreline Drive at Ocean Boulevard currently operates at unacceptable LOS E during the PM peak hour. The remaining seven key study intersections currently operate at acceptable levels of service during the AM and PM peak hours.

Appendix C contains the existing AM peak hour and PM peak hour level of service calculations for the eight (8) key study intersections.

TABLE 3-1

CITY OF LONG BEACH CLEARANCE INTERVALS[3]

Number of Signal Phases	Left-turn Phasing Type	Clearance Interval (percent)
2	Permitted	10%
3	Protected and Permitted	12%
3	Fully Protected	15%
4	Protected and Permitted	14%
4	Fully Protected	18%

[3] Source: *City of Long Beach Guidelines for Signalized Intersection Analysis, 2004.*

TABLE 3-2

LEVEL OF SERVICE CRITERIA FOR SIGNALIZED INTERSECTIONS (ICU METHODOLOGY)[4]

Level of Service (LOS)	Intersection Capacity Utilization Value (V/C)	Level of Service Description
A	≤ 0.600	EXCELLENT. No vehicle waits longer than one red light, and no approach phase is fully used.
B	0.601 – 0.700	VERY GOOD. An occasional approach phase is fully utilized; many drivers begin to feel somewhat restricted within groups of vehicles.
C	0.701 – 0.800	GOOD. Occasionally drivers may have to wait through more than one red light; backups may develop behind turning vehicles.
D	0.801 – 0.900	FAIR. Delays may be substantial during portions of the rush hours, but enough lower volume periods occur to permit clearing of developing lines, preventing excessive backups.
E	0.901 – 1.000	POOR. Represents the most vehicles intersection approaches can accommodate; may be long lines of waiting vehicles through several signal cycles.
F	> 1.000	FAILURE. Backups from nearby locations or on cross streets may restrict or prevent movement of vehicles out of the intersection approaches. Potentially very long delays with continuously increasing queue lengths.

[4] Source: *Transportation Research Board Circular 212 - Interim Materials on Highway Capacity.*

TABLE 3-3

LEVEL OF SERVICE CRITERIA FOR UNSIGNALIZED INTERSECTIONS

Level of Service (LOS)	Highway Capacity Manual Delay Value (sec/veh)	Level of Service Description
A	≤ 10.0	Little or no delay
B	> 10.0 and ≤ 15.0	Short traffic delays
C	> 15.0 and ≤ 25.0	Average traffic delays
D	> 25.0 and ≤ 35.0	Long traffic delays
E	> 35.0 and ≤ 50.0	Very long traffic delays
F	> 50.0	Severe congestion

TABLE 3-4
EXISTING PEAK HOUR LEVELS OF SERVICE

Key Intersection	Time Period	Control Type	ICU/HCM	LOS
1. Golden Shore at Ocean Boulevard	AM PM	5∅ Traffic Signal	0.517 0.632	A B
2. Pacific Avenue at Ocean Boulevard	AM PM	6∅ Traffic Signal	0.547 0.500	A A
3. Pine Avenue at Ocean Boulevard	AM PM	6∅ Traffic Signal	0.532 0.674	A B
4. Pine Avenue at Seaside Way	AM PM	5∅ Traffic Signal	0.400 0.477	A A
5. Pine Avenue at Shoreline Drive	AM PM	8∅ Traffic Signal	0.352 0.510	A A
6. Locust Avenue at Ocean Boulevard	AM PM	3∅ Traffic Signal	0.458 0.473	A A
7. Long Beach Boulevard at Ocean Boulevard	AM PM	3∅ Traffic Signal	0.517 0.483	A A
8. Alamitos Avenue/Shoreline Drive at Ocean Boulevard	AM PM	6∅ Traffic Signal	0.746 **0.902**	C **E**

Notes:

- **Bold ICU/LOS values** indicate adverse service levels based on City LOS standards.
- s/v = seconds per vehicle (delay)

4.0 TRAFFIC FORECASTING METHODOLOGY

In order to estimate the traffic impact characteristics of the proposed Project, a multi-step process has been utilized. The first step is traffic generation, which estimates the total arriving and departing traffic on a peak hour and daily basis. The traffic generation potential is forecast by applying the appropriate vehicle trip generation equations or rates to the project development tabulation.

The second step of the forecasting process is traffic distribution, which identifies the origins and destinations of inbound and outbound project traffic. These origins and destinations are typically based on demographics and existing/expected future travel patterns in the study area.

The third step is traffic assignment, which involves the allocation of project traffic to study area streets and intersections. Traffic assignment is typically based on minimization of travel time, which may or may not involve the shortest route, depending on prevailing operating conditions and travel speeds. Traffic distribution patterns are indicated by general percentage orientation, while traffic assignment allocates specific volume forecasts to individual roadway links and intersection turning movements throughout the study area.

With the forecasting process complete and project traffic assignments developed, the impact of the project is isolated by comparing operational (LOS) conditions at selected key intersections using expected future traffic volumes with and without forecast project traffic. The need for site-specific and/or cumulative local area traffic improvements can then be evaluated.

5.0 PROJECT TRAFFIC CHARACTERISTICS

5.1 Project Traffic Generation

Traffic generation is expressed in vehicle trip ends, defined as one-way vehicular movements, either entering or exiting the generating land use. Generation equations and/or rates used in the traffic forecasting procedure are found in the Ninth Edition of *Trip Generation*, published by the Institute of Transportation Engineers (ITE) [Washington D.C., 2012].

Table 5-1 summarizes the trip generation rates used in forecasting the vehicular trips generated by the Project and also presents the project's forecast peak hour and daily traffic volumes. As shown, the trip generation potential of the Project was estimated using ITE Land Use 220: Apartments trip rates. Review of *Table 5-1* indicates that the proposed Project is forecast to generate approximately 751 daily trips, with 58 trips (11 inbound, 47 outbound) produced in the AM peak hour and 70 trips (45 inbound, 25 outbound) produced in the PM peak hour on a typical weekday.

5.2 Project Traffic Distribution and Assignment

Figure 5-1 illustrates the general, directional traffic distribution pattern for the proposed Project. Project traffic volumes both entering and exiting the project site have been distributed and assigned to the adjacent street system based on the following considerations:

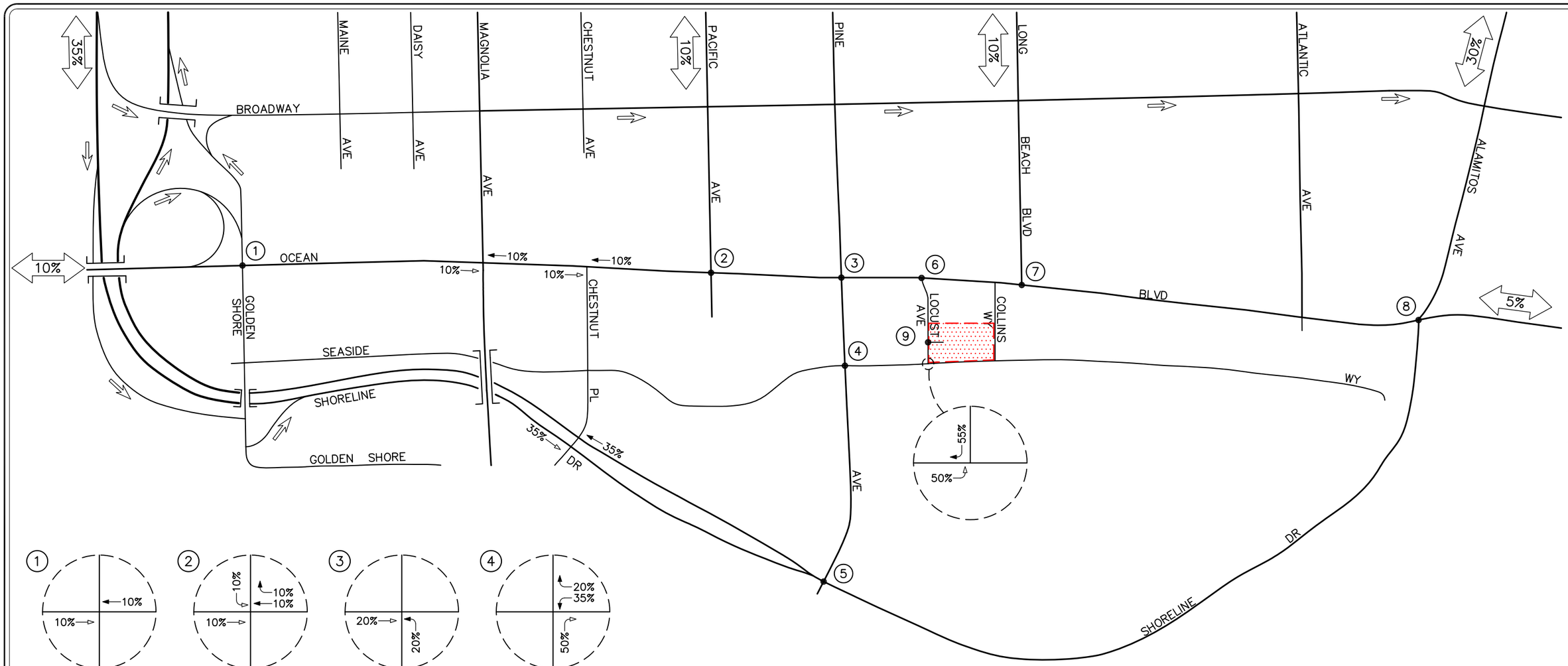
- location of site access points in relation to the surrounding street system,
- the site's proximity to major traffic carriers and regional access routes,
- physical characteristics of the circulation system such as lane channelization and presence of traffic signals that affect travel patterns,
- presence of traffic congestion in the surrounding vicinity, and
- ingress/egress availability at the project site.

The anticipated AM and PM peak hour project traffic volumes associated with the proposed Project are presented in ***Figures 5-2*** and ***5-3***, respectively. The traffic volume assignments presented in *Figures 5-2* and *5-3* reflect the traffic distribution characteristics shown in *Figure 5-1* and the traffic generation forecast presented in *Table 5-1*. It should be noted that the trip generation methodology and forecasts were approved by City staff prior to proceeding with further analyses.

5.3 Existing Plus Project Traffic Conditions

The existing plus project traffic conditions have been generated based upon existing conditions and the estimated project traffic. These forecast traffic conditions have been prepared pursuant to the California Environmental Quality Act (CEQA) guidelines, which require that the potential impacts of a Project be evaluated upon the circulation system as it currently exists. This traffic volume scenario and the related intersection capacity analyses will identify the roadway improvements necessary to mitigate the direct traffic impacts of the Project, if any.

Figures 5-4 and ***5-5*** present projected AM and PM peak hour traffic volumes at the eight (8) key study intersections with the addition of the trips generated by the proposed Project to existing traffic volumes, respectively.

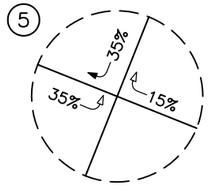


GOLDEN SHORE @ OCEAN BLVD

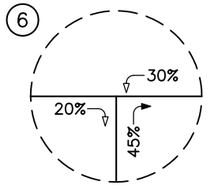
PACIFIC AVE @ OCEAN BLVD

PINE AVE @ OCEAN BLVD

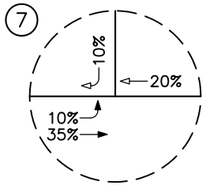
PINE AVE @ SEASIDE WY



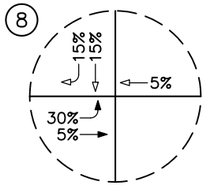
PINE AVE @ SHORELINE DR



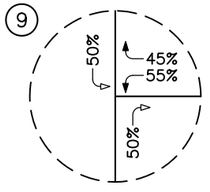
LOCUST AVE @ OCEAN BLVD



LONG BEACH BLVD @ OCEAN BLVD



ALAMITOS AVE/ SHORELINE DR @ OCEAN BLVD



LOCUST AVE @ PROJECT DWY

LINSCOTT LAW & GREENSPAN engineers

N NO SCALE

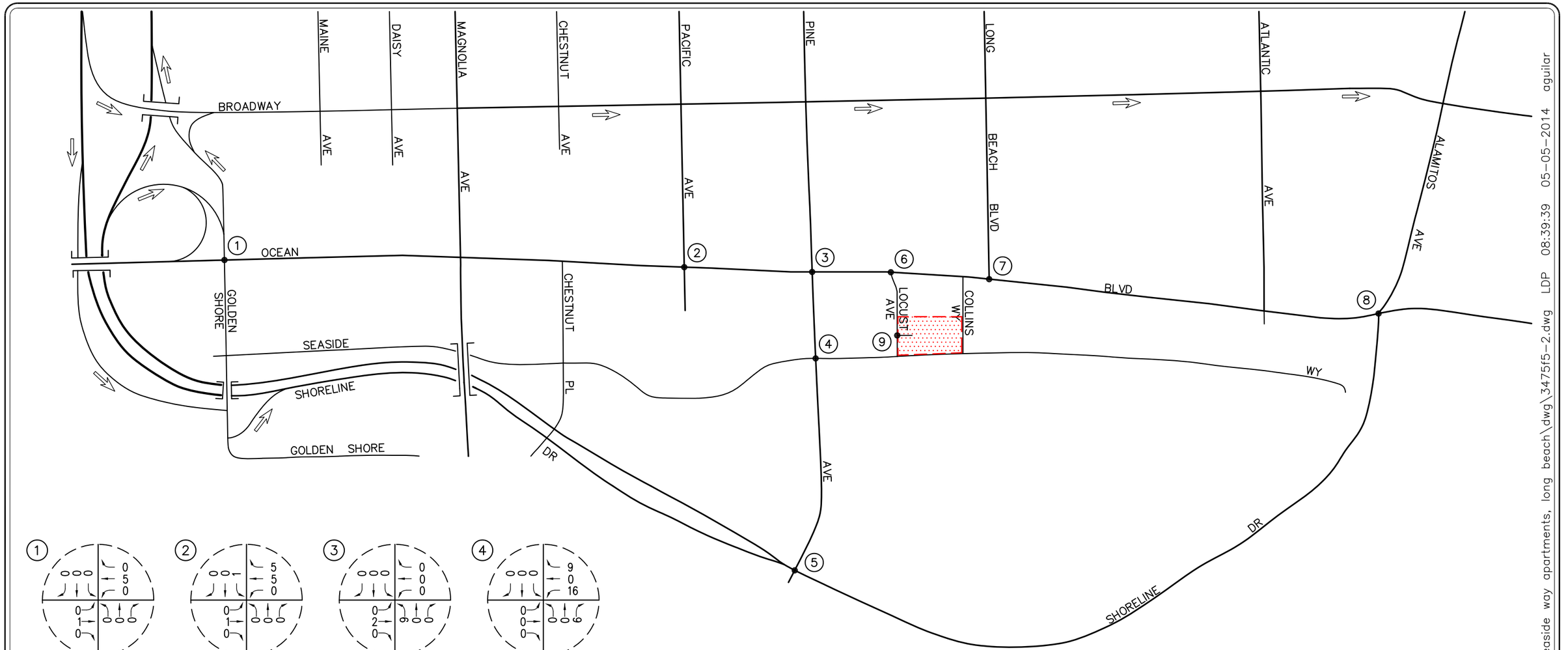
KEY

(#) = STUDY INTERSECTION
= INBOUND PERCENTAGE
= OUTBOUND PERCENTAGE
= PROJECT SITE

FIGURE 5-1

PROJECT TRAFFIC DISTRIBUTION PATTERN

207 EAST SEASIDE WAY APARTMENTS PROJECT, LONG BEACH

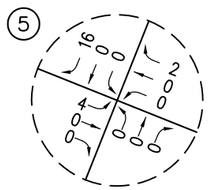


GOLDEN SHORE @
OCEAN BLVD

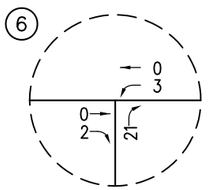
PACIFIC AVE @
OCEAN BLVD

PINE AVE @
OCEAN BLVD

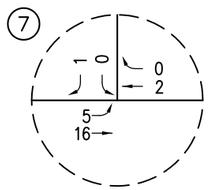
PINE AVE @
SEASIDE WY



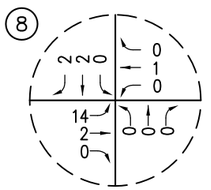
PINE AVE @
SHORELINE DR



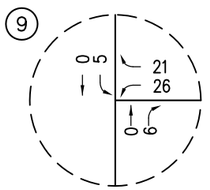
LOCUST AVE @
OCEAN BLVD



LONG BEACH BLVD @
OCEAN BLVD



ALAMITOS AVE/
SHORELINE DR @
OCEAN BLVD



LOCUST AVE @
PROJECT DWY

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LINSCOTT LAW & GREENSPAN engineers

N NO SCALE

KEY

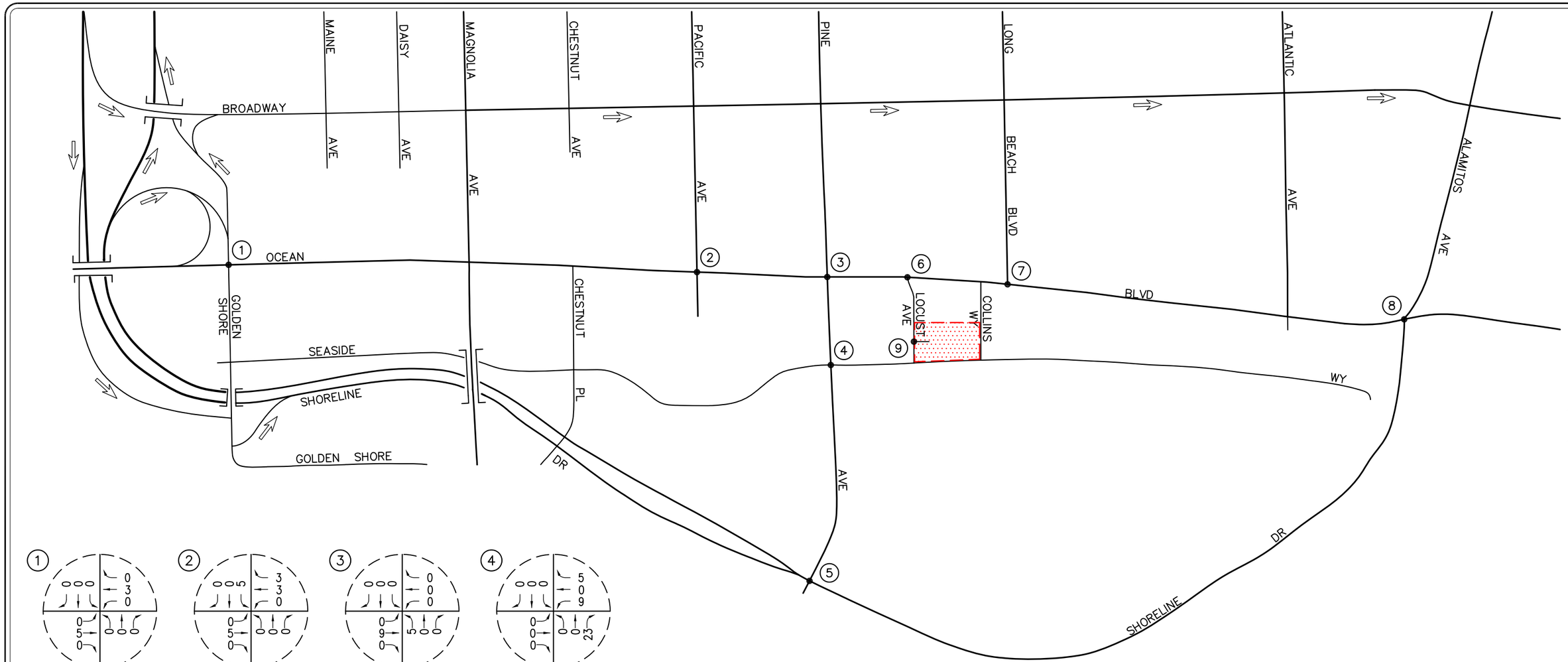
(#) = STUDY INTERSECTION

= PROJECT SITE

FIGURE 5-2

AM PEAK HOUR PROJECT TRAFFIC VOLUMES

207 EAST SEASIDE WAY APARTMENTS PROJECT, LONG BEACH

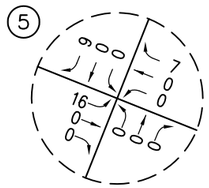


GOLDEN SHORE @ OCEAN BLVD

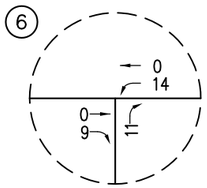
PACIFIC AVE @ OCEAN BLVD

PINE AVE @ OCEAN BLVD

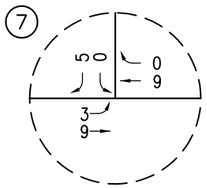
PINE AVE @ SEASIDE WY



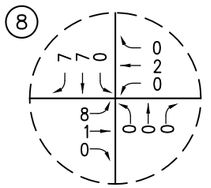
PINE AVE @ SHORELINE DR



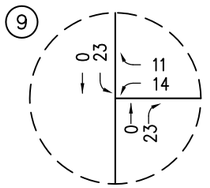
LOCUST AVE @ OCEAN BLVD



LONG BEACH BLVD @ OCEAN BLVD



ALAMITOS AVE/ SHORELINE DR @ OCEAN BLVD



LOCUST AVE @ PROJECT DWY

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LINSCOTT LAW & GREENSPAN engineers

N NO SCALE

KEY

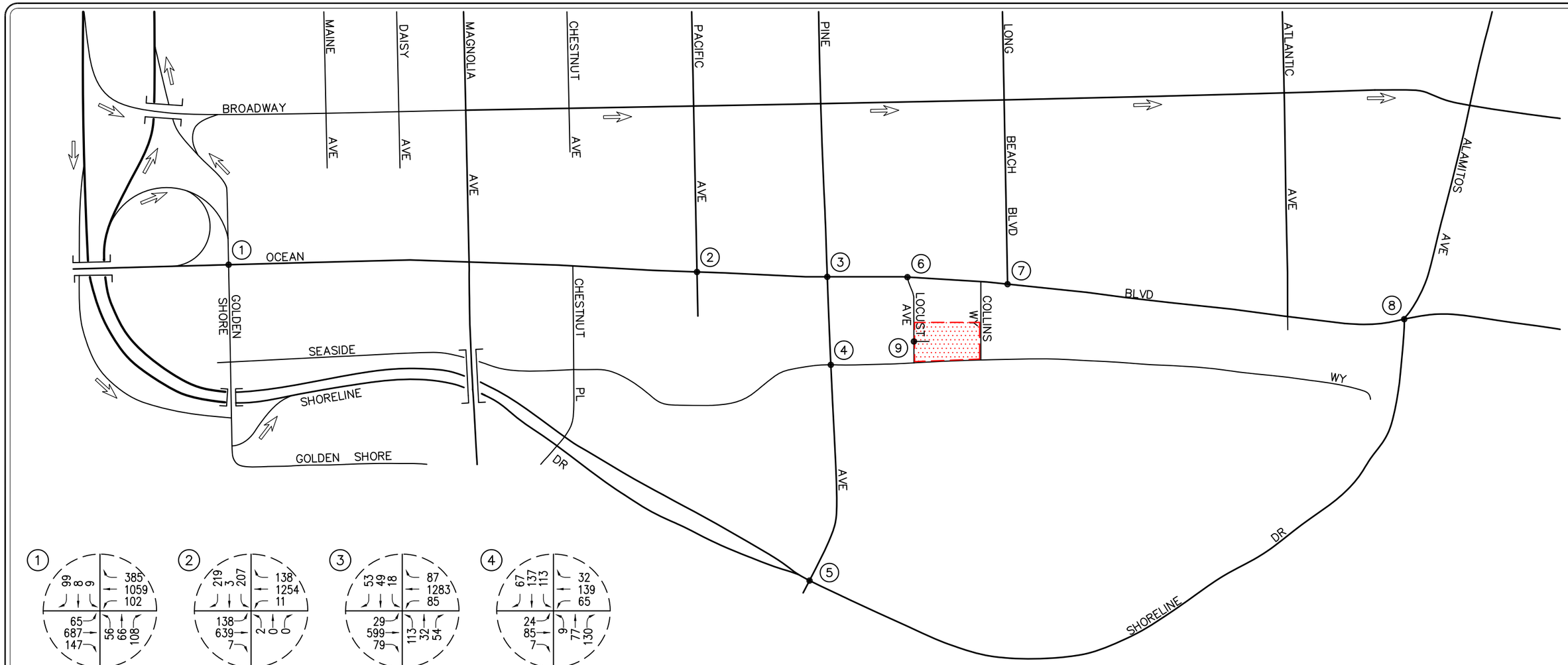
(#) = STUDY INTERSECTION

= PROJECT SITE

FIGURE 5-3

PM PEAK HOUR PROJECT TRAFFIC VOLUMES

207 EAST SEASIDE WAY APARTMENTS PROJECT, LONG BEACH

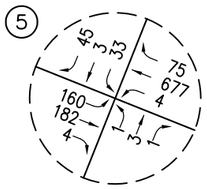


GOLDEN SHORE @ OCEAN BLVD

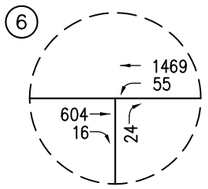
PACIFIC AVE @ OCEAN BLVD

PINE AVE @ OCEAN BLVD

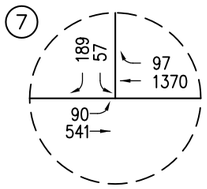
PINE AVE @ SEASIDE WY



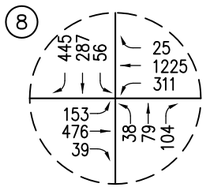
PINE AVE @ SHORELINE DR



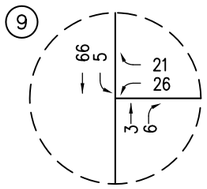
LOCUST AVE @ OCEAN BLVD



LONG BEACH BLVD @ OCEAN BLVD



ALAMITOS AVE/ SHORELINE DR @ OCEAN BLVD



LOCUST AVE @ PROJECT DWY

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LINSCOTT LAW & GREENSPAN engineers

N NO SCALE

KEY

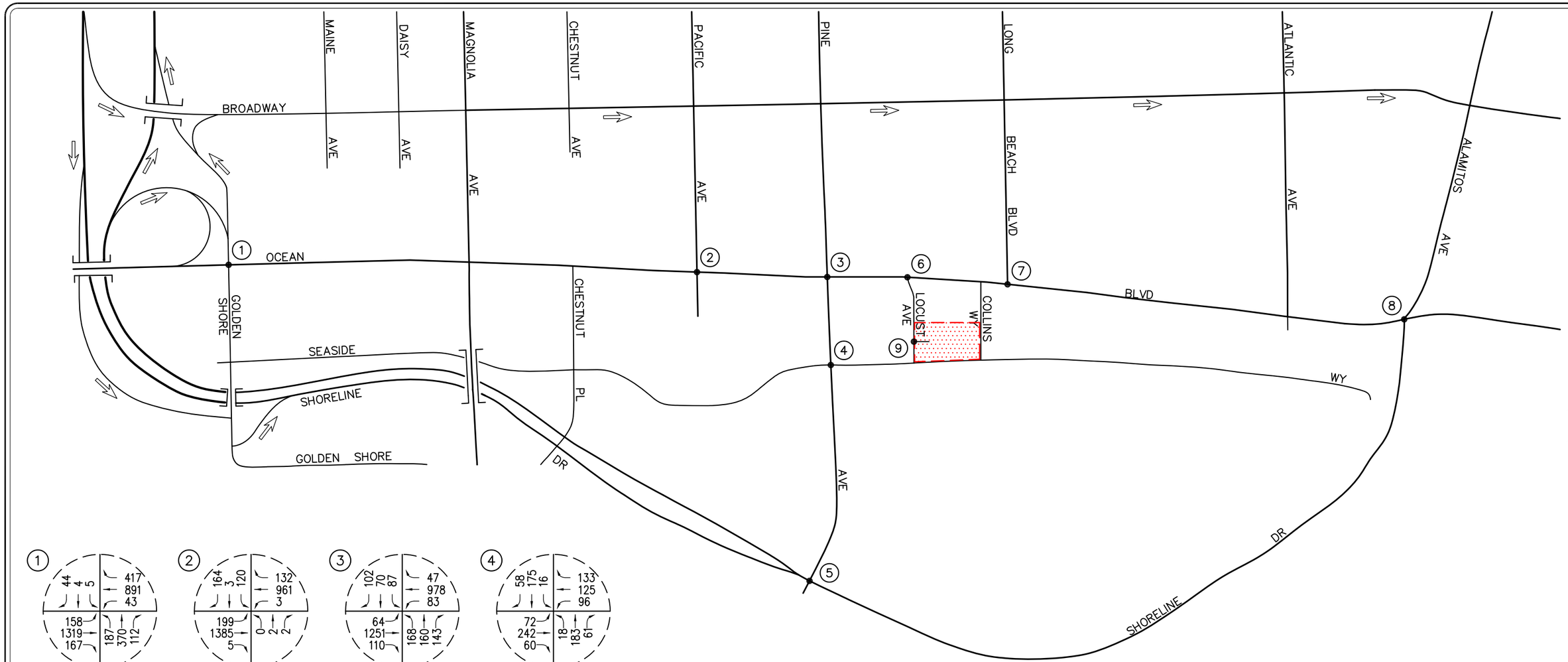
(#) = STUDY INTERSECTION

= PROJECT SITE

FIGURE 5-4

EXISTING PLUS PROJECT AM PEAK HOUR TRAFFIC VOLUMES

207 EAST SEASIDE WAY APARTMENTS PROJECT, LONG BEACH

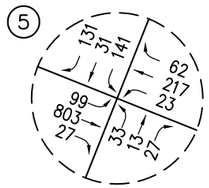


GOLDEN SHORE @ OCEAN BLVD

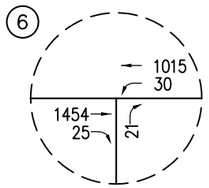
PACIFIC AVE @ OCEAN BLVD

PINE AVE @ OCEAN BLVD

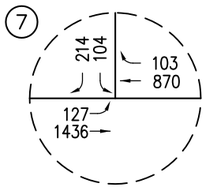
PINE AVE @ SEASIDE WY



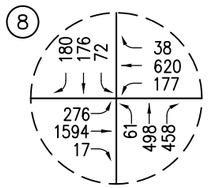
PINE AVE @ SHORELINE DR



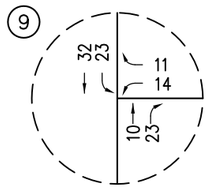
LOCUST AVE @ OCEAN BLVD



LONG BEACH BLVD @ OCEAN BLVD



ALAMITOS AVE/ SHORELINE DR @ OCEAN BLVD



LOCUST AVE @ PROJECT DWY

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LINSCOTT LAW & GREENSPAN engineers

N NO SCALE

KEY

(#) = STUDY INTERSECTION

= PROJECT SITE

FIGURE 5-5

EXISTING PLUS PROJECT PM PEAK HOUR TRAFFIC VOLUMES

207 EAST SEASIDE WAY APARTMENTS PROJECT, LONG BEACH

TABLE 5-1
PROJECT TRAFFIC GENERATION FORECAST[5]

ITE Land Use Code / Project Description	Daily 2-Way	AM Peak Hour			PM Peak Hour		
		Enter	Exit	Total	Enter	Exit	Total
Generation Factors:							
▪ 220: Apartments (TE/DU)	6.65	0.10	0.41	0.51	0.40	0.22	0.62
Generation Forecast:							
▪ 207 East Seaside Way Apartments (113 DU)	751	11	47	58	45	25	70

Notes:
- TE/DU = Trip end per dwelling unit

[5] Source: *Trip Generation*, 9th Edition, Institute of Transportation Engineers (ITE) [Washington, D.C. (2012)].

6.0 FUTURE TRAFFIC CONDITIONS

6.1 Ambient Traffic Growth

Horizon year, background traffic growth estimates have been calculated using an ambient growth factor. The ambient traffic growth factor is intended to include unknown and future cumulative projects in the study area, as well as account for regular growth in traffic volumes due to the development of projects outside the study area. The future growth in traffic volumes has been calculated at one percent (1.0%) per year. Applied to existing Year 2014 traffic volumes results in a three percent (3.0%) increase growth in existing volumes to horizon year 2017.

6.2 Cumulative Projects Traffic Characteristics

In order to make a realistic estimate of future on-street conditions prior to implementation of the proposed Project, the status of other known development projects (cumulative projects) in the area has been researched. With this information, the potential impact of the proposed Project can be evaluated within the context of the cumulative impact of all ongoing development. Based on our research, there are ten (10) cumulative projects within a two-mile radius of the project that are located in the City of Long Beach. These projects have either been built, but not yet fully occupied, or are being processed for approval. These ten (10) cumulative projects have been included as part of the cumulative background setting.

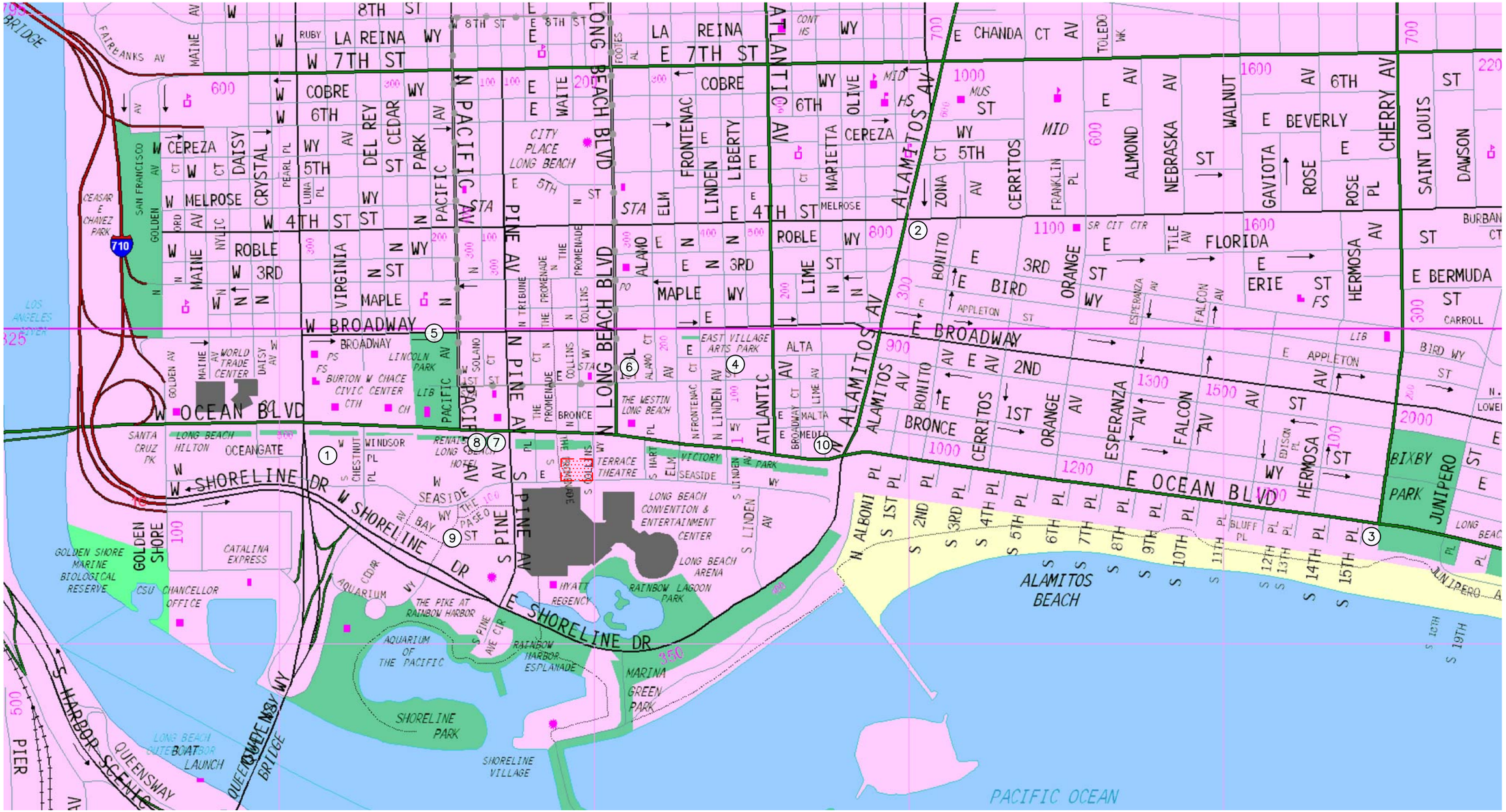
Table 6-1 provides the location and a brief description for each of the ten (10) cumulative projects. ***Figure 6-1*** graphically illustrates the location of the cumulative projects. These cumulative projects are expected to generate vehicular traffic, which may affect the operating conditions of the key study intersections.

Table 6-2 presents the development totals and resultant trip generation for the ten (10) cumulative projects. As shown in *Table 6-2*, the cumulative projects are expected to generate a combined total of 13,479 daily trips on a "typical" weekday, with 830 trips (301 inbound and 529 outbound) forecast during the AM peak hour, and 1,180 trips (653 inbound and 527 outbound) forecast during the PM peak hour.

6.3 Year 2017 Traffic Volumes

Figures 6-2 and ***6-3*** present AM and PM peak hour cumulative project traffic volumes at the key study intersections for the Year 2017, respectively. ***Figures 6-4*** and ***6-5*** present future AM and PM peak hour cumulative traffic volumes at the key study intersections for the Year 2017, respectively. Please note that the cumulative traffic volumes represent the accumulation of existing traffic, ambient growth traffic, and cumulative projects traffic.

Figures 6-6 and ***6-7*** illustrate Year 2017 forecast AM and PM peak hour traffic volumes with the inclusion of the trips generated by the proposed Project, respectively.



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LINSCOTT LAW & GREENSPAN engineers

N NO SCALE

KEY

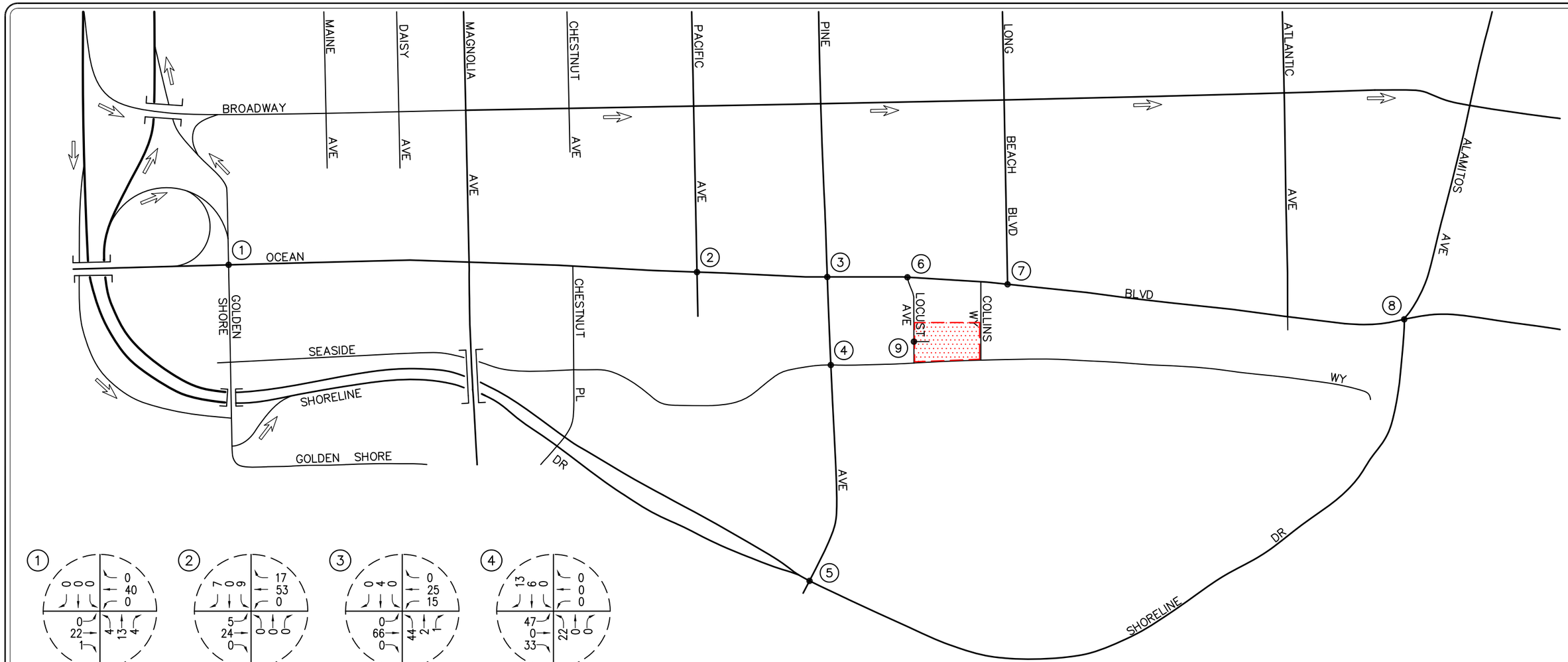
(#) = CUMULATIVE PROJECT LOCATION

= PROJECT SITE

FIGURE 6-1

CUMULATIVE PROJECTS LOCATION MAP

207 E SEASIDE WAY APARTMENTS, LONG BEACH

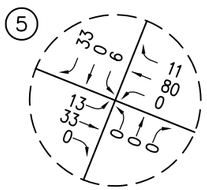


GOLDEN SHORE @ OCEAN BLVD

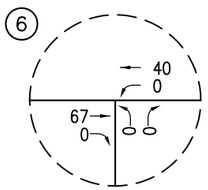
PACIFIC AVE @ OCEAN BLVD

PINE AVE @ OCEAN BLVD

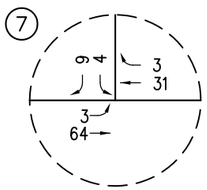
PINE AVE @ SEASIDE WY



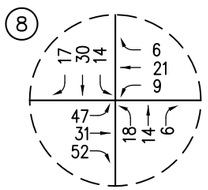
PINE AVE @ SHORELINE DR



LOCUST AVE @ OCEAN BLVD



LONG BEACH BLVD @ OCEAN BLVD



LOS ALAMITOS BLVD/ SHORELINE DR @ OCEAN BLVD

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LINSCOTT LAW & GREENSPAN engineers

N NO SCALE

KEY

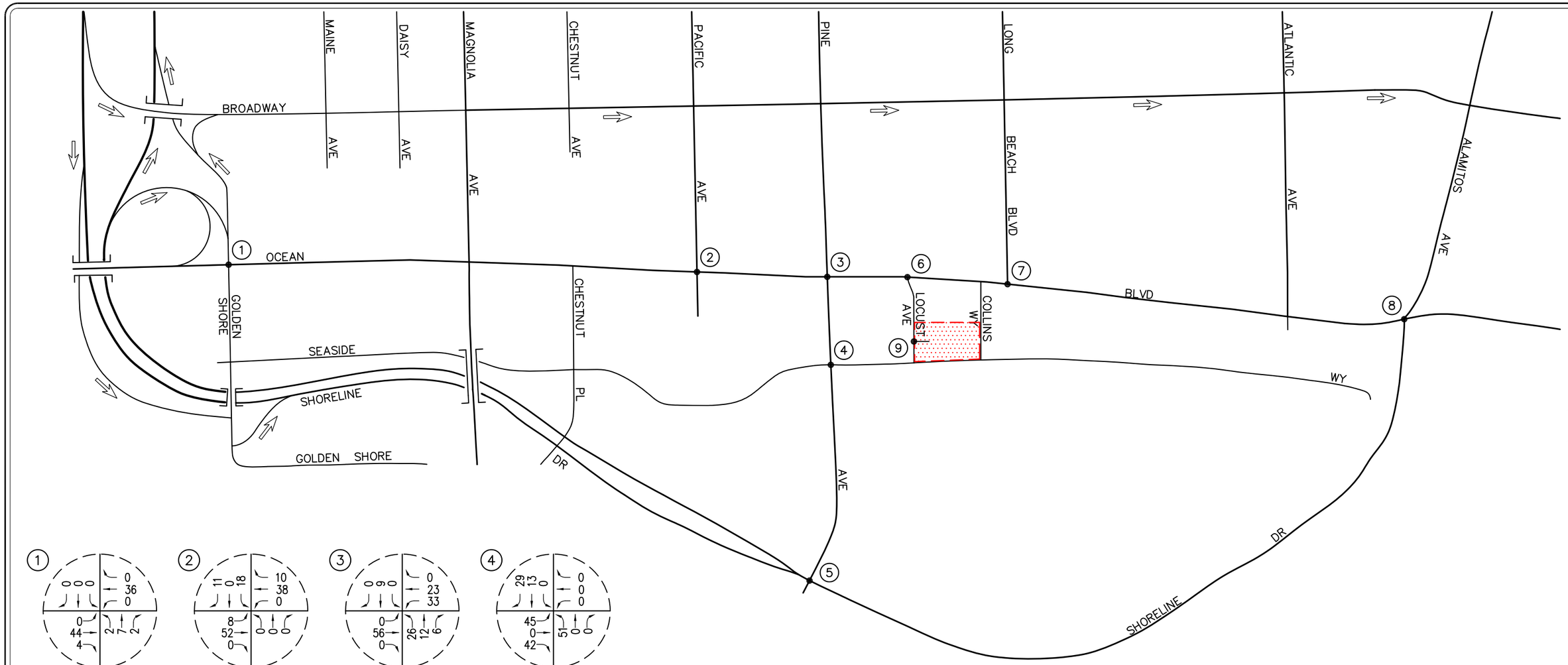
(#) = STUDY INTERSECTION

= PROJECT SITE

FIGURE 6-2

AM PEAK HOUR CUMULATIVE PROJECTS TRAFFIC VOLUMES

207 EAST SEASIDE WAY APARTMENTS PROJECT, LONG BEACH

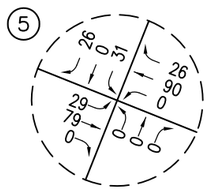


GOLDEN SHORE @
OCEAN BLVD

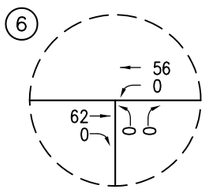
PACIFIC AVE @
OCEAN BLVD

PINE AVE @
OCEAN BLVD

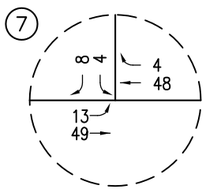
PINE AVE @
SEASIDE WY



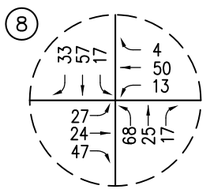
PINE AVE @
SHORELINE DR



LOCUST AVE @
OCEAN BLVD



LONG BEACH BLVD @
OCEAN BLVD



LOS ALAMITOS BLVD/
SHORELINE DR @
OCEAN BLVD

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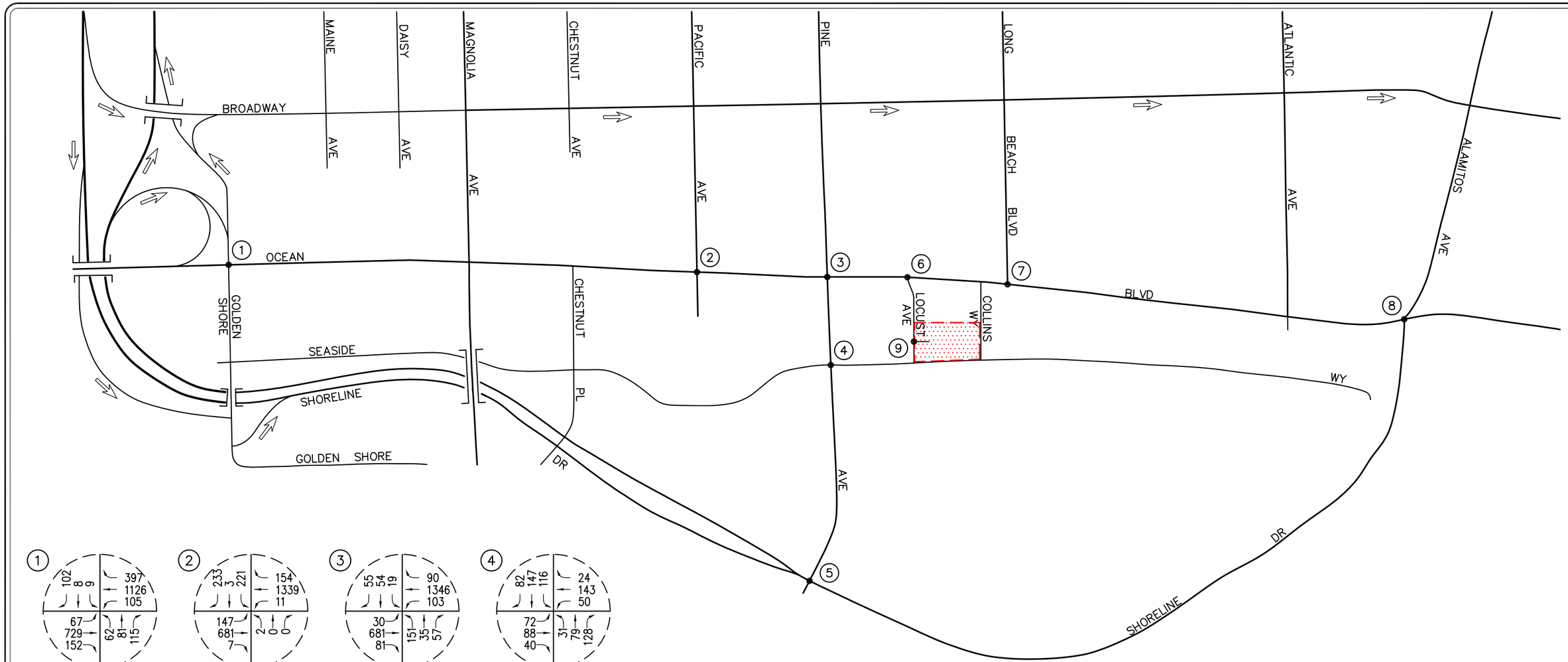
LINSCOTT LAW & GREENSPAN engineers

N NO SCALE

KEY
(#) = STUDY INTERSECTION
= PROJECT SITE

FIGURE 6-3

PM PEAK HOUR CUMULATIVE PROJECTS TRAFFIC VOLUMES
207 EAST SEASIDE WAY APARTMENTS PROJECT, LONG BEACH

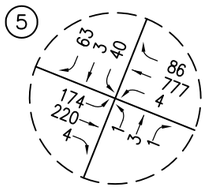


GOLDEN SHORE @ OCEAN BLVD

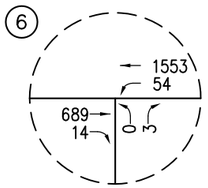
PACIFIC AVE @ OCEAN BLVD

PINE AVE @ OCEAN BLVD

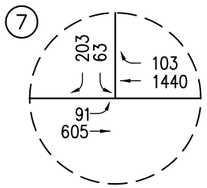
PINE AVE @ SEASIDE WY



PINE AVE @ SHORELINE DR



LOCUST AVE @ OCEAN BLVD



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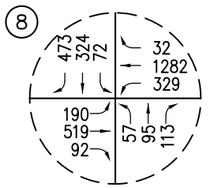

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LINSCOTT LAW & GREENSPAN engineers

N NO SCALE

KEY

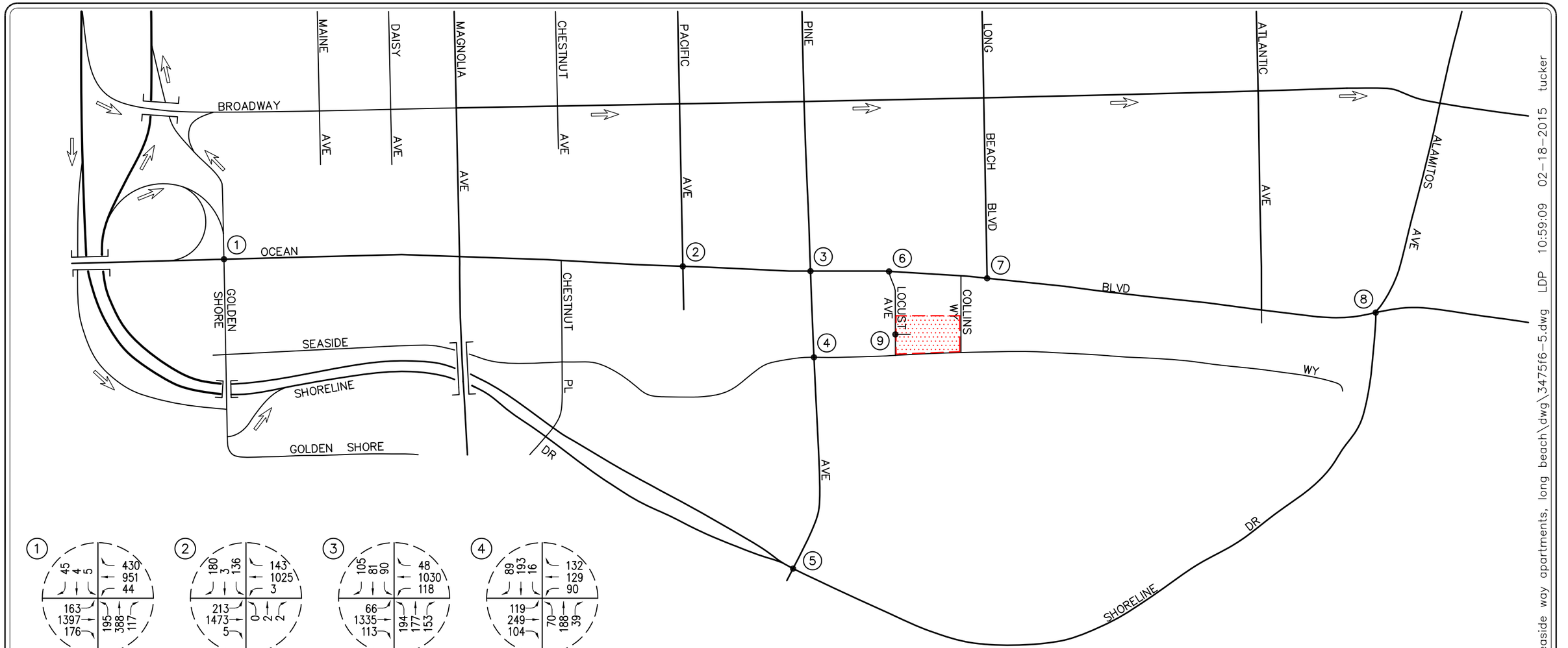
(#) = STUDY INTERSECTION

= PROJECT SITE

FIGURE 6-4

YEAR 2017 CUMULATIVE AM PEAK HOUR TRAFFIC VOLUMES

207 EAST SEASIDE WAY APARTMENTS PROJECT, LONG BEACH

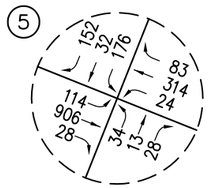


GOLDEN SHORE @ OCEAN BLVD

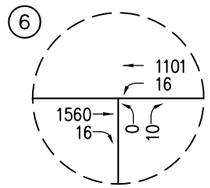
PACIFIC AVE @ OCEAN BLVD

PINE AVE @ OCEAN BLVD

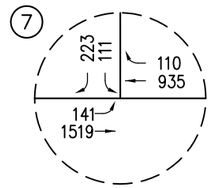
PINE AVE @ SEASIDE WY



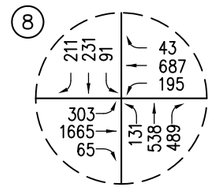
PINE AVE @ SHORELINE DR



LOCUST AVE @ OCEAN BLVD



LONG BEACH BLVD @ OCEAN BLVD



LOS ALAMITOS BLVD/ SHORELINE DR @ OCEAN BLVD

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LINSCOTT LAW & GREENSPAN engineers

N NO SCALE

KEY

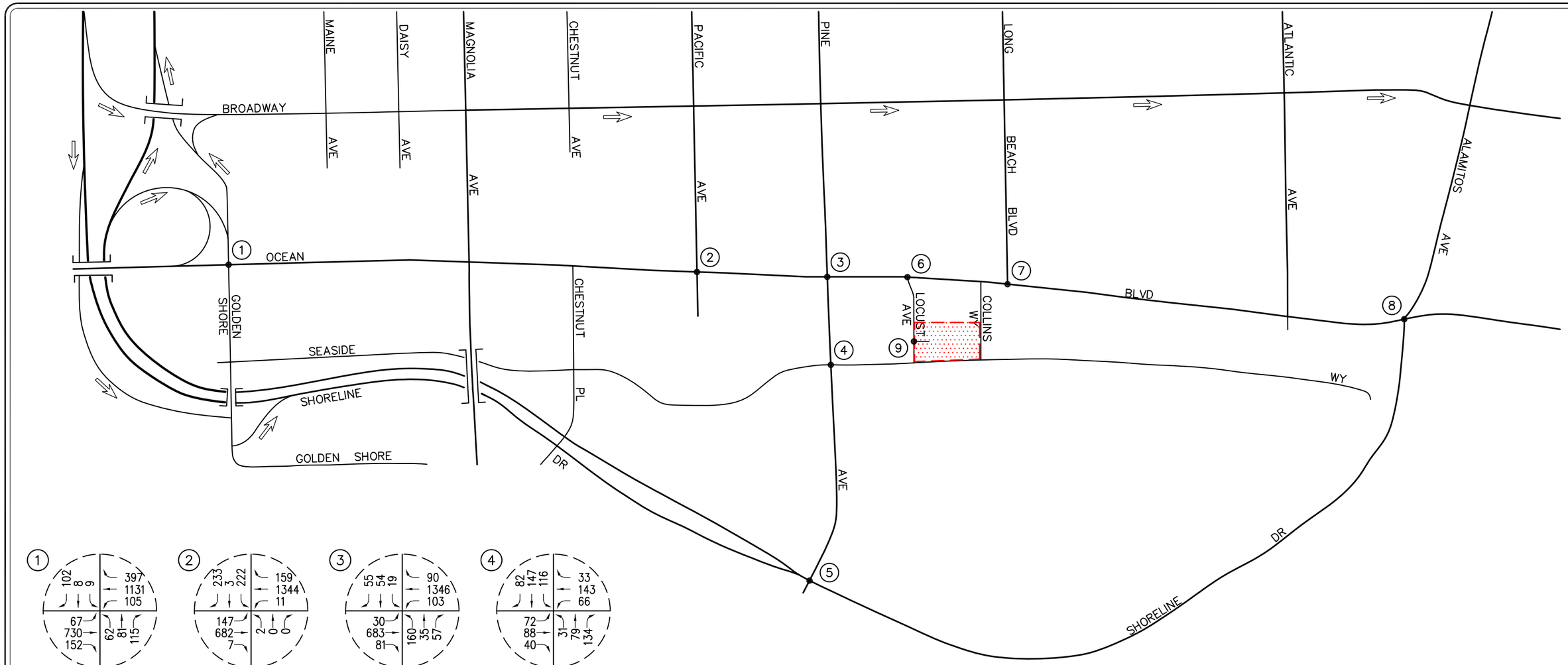
(#) = STUDY INTERSECTION

= PROJECT SITE

FIGURE 6-5

YEAR 2017 CUMULATIVE PM PEAK HOUR TRAFFIC VOLUMES

207 EAST SEASIDE WAY APARTMENTS PROJECT, LONG BEACH

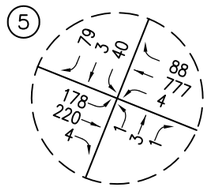


GOLDEN SHORE @
OCEAN BLVD

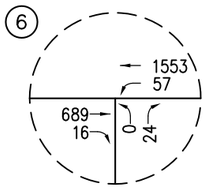
PACIFIC AVE @
OCEAN BLVD

PINE AVE @
OCEAN BLVD

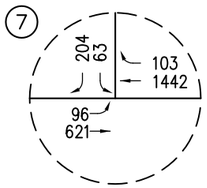
PINE AVE @
SEASIDE WY



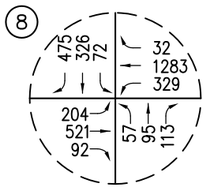
PINE AVE @
SHORELINE DR



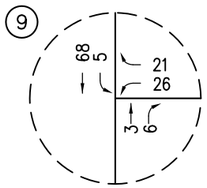
LOCUST AVE @
OCEAN BLVD



LONG BEACH BLVD @
OCEAN BLVD



LOS ALAMITOS BLVD/
SHORELINE DR @
OCEAN BLVD



LOCUST AVE @
PROJECT DWY

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LINSCOTT LAW & GREENSPAN engineers

N NO SCALE

KEY

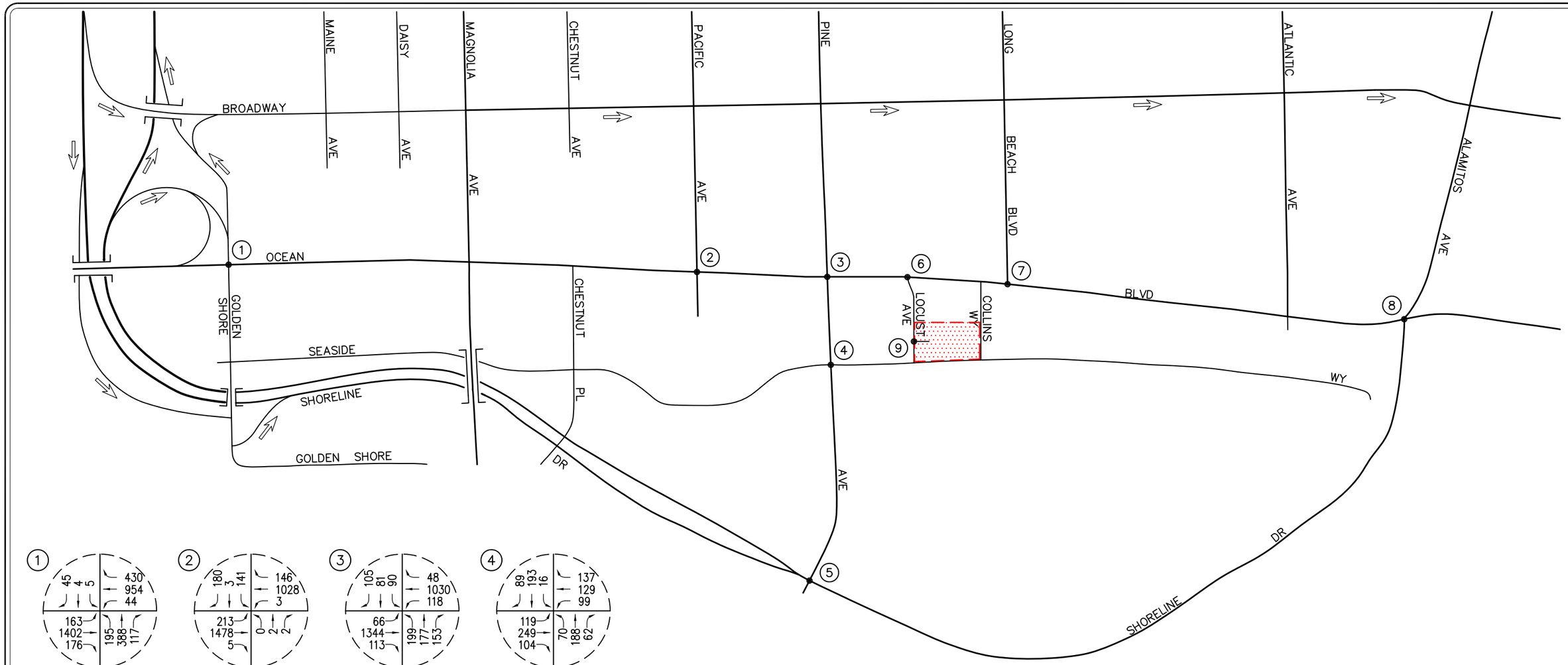
(#) = STUDY INTERSECTION

= PROJECT SITE

FIGURE 6-6

YEAR 2017 CUMULATIVE PLUS PROJECT
AM PEAK HOUR TRAFFIC VOLUMES

207 EAST SEASIDE WAY APARTMENTS PROJECT, LONG BEACH

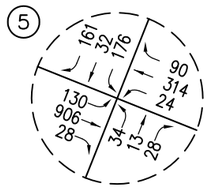


GOLDEN SHORE @
OCEAN BLVD

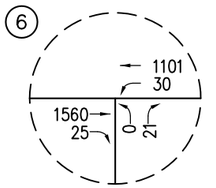
PACIFIC AVE @
OCEAN BLVD

PINE AVE @
OCEAN BLVD

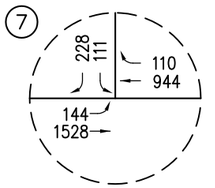
PINE AVE @
SEASIDE WY



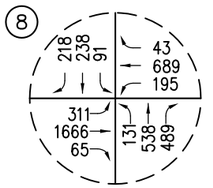
PINE AVE @
SHORELINE DR



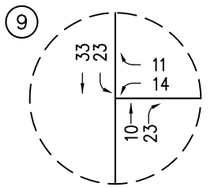
LOCUST AVE @
OCEAN BLVD



LONG BEACH BLVD @
OCEAN BLVD



LOS ALAMITOS BLVD/
SHORELINE DR @
OCEAN BLVD



LOCUST AVE @
PROJECT DWY

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LINSCOTT LAW & GREENSPAN engineers

N NO SCALE

KEY

(#) = STUDY INTERSECTION

= PROJECT SITE

FIGURE 6-7

YEAR 2017 CUMULATIVE PLUS PROJECT
PM PEAK HOUR TRAFFIC VOLUMES
207 EAST SEASIDE WAY APARTMENTS PROJECT, LONG BEACH

TABLE 6-1

LOCATION AND DESCRIPTION OF CUMULATIVE PROJECTS[6]

No.	Cumulative Project	Location	Description
1.	444 West Ocean Blvd Apartments	442 West Ocean Boulevard	95 Apartments
2.	Medical Building	300 Alamitos Avenue	14,325 SF Medical Office Building and Senior Housing
3.	Silversands	2010 East Ocean Boulevard	72 Hotel Rooms and 33 Apartments
4.	Mixed-Use Project	125 Linden Avenue	25 Apartments and 1,257 SF Retail
5.	American Hotel	220 West Broadway	7,326 SF Office and 7,326 Restaurant
6.	City Hall East	100 Long Beach Boulevard	156 Apartments and 3,621 SF Retail
7.	Ocean Center Building Reuse	110 West Ocean Boulevard	81 Apartments, 5,000 SF Restaurant and 5,400 SF Retail
8.	Oceanaire Residential Project	150 West Ocean Boulevard	216 Apartments
9.	The Pike Outlet Conversion Project	Generally south of Seaside Way between Cedar Ave and Pine Ave	Conversion of Retail/Entertainment Center to Retail Outlet Center and the Construction of 49,825 SF of New Retail Space
10.	Shoreline Gateway	777 E. Ocean Boulevard, north of Ocean Boulevard and east of Alamitos Boulevard	445 residential condominium units and 15,549 SF retail

[6] Source: City of Long Beach Planning Department.

TABLE 6-2

CUMULATIVE PROJECTS TRAFFIC GENERATION FORECAST[7]

Cumulative Project Description	Daily 2-way	AM Peak Hour			PM Peak Hour		
		In	Out	Total	In	Out	Total
1. 442 West Ocean Blvd Apartments	632	10	38	48	38	21	59
2. Medical Building	518	27	7	34	14	37	51
3. Silversands	807	25	30	55	35	28	63
4. Mixed-Use Project	220	4	10	14	12	9	21
5. American Hotel	780	53	37	90	27	26	53
6. City Hall East	1,192	18	65	83	69	41	110
7. Ocean Center Building Reuse	1,247	41	59	100	60	38	98
8. Residential Project	1,436	22	88	110	87	47	134
9. The Pike Outlet Conversion Project	2,266	41	22	63	85	124	209
10. Shoreline Gateway[8]	4,381	60	173	233	226	156	382
Total Cumulative Projects Trip Generation Potential	**13,479**	**301**	**529**	**830**	**653**	**527**	**1,180**

[7] Source: *Trip Generation*, 9th Edition, Institute of Transportation Engineers (ITE) [Washington, D.C. (2012)].

[8] Trip Generation forecast based on the approach published in the *City of Long Beach Shoreline Gateway EIR Traffic Impact Study, June 2006, prepared by MMA.* Project Development Totals based on information provided by the City of Long Beach.

7.0 TRAFFIC IMPACT ANALYSIS METHODOLOGY

7.1 Impact Criteria and Thresholds

The relative impact of the added Project traffic volumes generated by the proposed Project during the AM and PM peak hours was evaluated based on analysis of future operating conditions at the key study intersections, without, then with, the proposed Project. The previously discussed capacity analysis procedures were utilized to investigate the future volume-to-capacity relationships and service level characteristics at each study intersection. The significance of the potential impacts of the Project at each key intersection was then evaluated using the City's LOS standards and the traffic impact criteria defined below.

Impacts to local and regional transportation systems are considered significant if:

- An unacceptable peak hour Level of Service (LOS) (i.e. LOS E or F) at any of the key intersections is projected. The City of Long Beach considers LOS D (ICU = 0.801 - 0.900) to be the minimum acceptable LOS for all intersections. For the City of Long Beach, the current LOS, if worse than LOS D (i.e. LOS E or F), should also be maintained; and

- The project increases traffic demand at the study intersection by 2% of capacity (ICU increase ≥ 0.020), causing or worsening LOS E or F (ICU > 0.901). At unsignalized intersections, a "significant" adverse traffic impact is defined as a project that: adds 2% of more traffic delay (seconds per vehicle) at an intersection operating LOS E or F.

7.2 Traffic Impact Analysis Scenarios

The following scenarios are those for which level of service (LOS) calculations have been performed at the key intersections for existing and near-term (Year 2017) traffic conditions for a typical weekday:

A. Existing Traffic Conditions;
B. Existing Plus Project Traffic Conditions;
C. Scenario (B) with Mitigation, if necessary,
D. Year 2017 Cumulative Traffic Conditions (existing plus ambient growth to Year 2017 at 1.0% per year plus cumulative projects traffic);
E. Year 2017 Cumulative Plus Project Traffic Conditions; and
F. Scenario (E) with Mitigation, if necessary.

8.0 PEAK HOUR INTERSECTION CAPACITY ANALYSIS

8.1 Existing Plus Project Traffic Conditions

Table 8-1 summarizes the peak hour Level of Service results at the key study intersections for Existing Plus Project traffic conditions. The first column (1) of ICU/LOS and HCM/LOS values in *Table 8-1* presents a summary of existing AM and PM peak hour traffic conditions (which were also presented in *Table 3-4*). The second column (2) presents existing traffic conditions with the addition of traffic generated by the proposed Project. The third column (3) shows the increase in ICU or HCM value due to the added peak hour project trips and indicates whether the traffic associated with the project will have a significant impact based on the LOS standards and the significant impact criteria defined in this report.

8.1.1 *Existing Traffic Conditions*

As previously presented in *Table 3-4*, one of the eight (8) key study intersections currently operates at an unacceptable level of service during the PM peak hour. The intersection of Alamitos Avenue/Shoreline Drive at Ocean Boulevard currently operates at unacceptable LOS E during the PM peak hour. The remaining seven key study intersections currently operate at acceptable levels of service during the AM and PM peak hours.

8.1.2 *Existing Plus Project Traffic Conditions*

Review of columns 2 and 3 of *Table 8-1* indicates that traffic associated with the proposed Project ***will not*** significantly impact any of the eight (8) key study intersections, when compared to the LOS standards and significant impact criteria specified in this report. Although the intersection of Alamitos Avenue/Shoreline Drive at Ocean Boulevard is forecast to operate at unacceptable LOS E during the PM peak hour with the addition of project traffic, the proposed Project is expected to add less than 0.020 to the ICU value. The remaining seven key study intersections are forecast to continue to operate at an acceptable LOS with the addition of Project generated traffic to existing traffic.

Appendix C contains the existing plus project AM peak hour and PM peak hour level of service calculations for the eight (8) key study intersections.

8.2 Year 2017 Traffic Conditions

Table 8-2 summarizes the peak hour Level of Service results at the key study intersections for Year 2017 traffic conditions. The first column (1) of ICU/LOS and HCM/LOS values in *Table 8-2* presents a summary of existing AM and PM peak hour traffic conditions (which were also presented in *Table 3-4*). The second column (2) lists future Year 2017 cumulative traffic conditions (existing plus ambient growth traffic plus cumulative projects traffic) based on existing intersection geometry, but without any traffic generated by the proposed Project. The third column (3) presents future forecast traffic conditions with the addition of traffic generated by the proposed Project. The fourth column (4) shows the increase in ICU or HCM value due to the added peak hour project trips and indicates whether the traffic associated with the project will have a significant impact based on the LOS standards and the significant impact criteria defined in this report.

8.2.1 *Year 2017 Cumulative Traffic Conditions*

An analysis of future (Year 2017) traffic conditions indicates that the addition of ambient traffic growth and cumulative projects traffic will adversely impact one of the key study intersections. The intersection of Alamitos Avenue/Shoreline Drive at Ocean Boulevard is forecast to continue to operate at unacceptable LOS E during the PM peak hour in the Year 2017. The remaining seven key study intersections are forecast to continue to operate at an acceptable LOS in the Year 2017 with the addition of ambient traffic growth and cumulative projects traffic to existing traffic.

8.2.2 *Year 2017 Cumulative Plus Project Traffic Conditions*

Review of columns 3 and 4 of *Table 8-2* indicates that traffic associated with the proposed Project ***will not*** significantly impact any of the eight (8) key study intersections, when compared to the LOS standards and significant impact criteria specified in this report. Although the intersection of Alamitos Avenue/Shoreline Drive at Ocean Boulevard is forecast to operate at unacceptable LOS E during the PM peak hour with the addition of project traffic in the Year 2017, the proposed Project is expected to add less than 0.020 to the ICU value. The remaining seven key study intersections are forecast to continue to operate at an acceptable LOS with the addition of Project generated traffic in the Year 2017.

Appendix C presents the Year 2017 plus project AM peak hour and PM peak hour level of service ccalculations for the eight (8) key study intersections.

TABLE 8-1
EXISTING PLUS PROJECT PEAK HOUR INTERSECTION CAPACITY ANALYSIS

Key Intersections	Time Period	(1) Existing Traffic Conditions		(2) Existing Plus Project Traffic Conditions		(3) Project Significant Impact[9]	
		ICU/HCM	LOS	ICU/HCM	LOS	Increase	Yes/No
1. Golden Shore at Ocean Boulevard	AM	0.517	A	0.518	A	0.001	No
	PM	0.632	B	0.633	B	0.001	No
2. Pacific Avenue at Ocean Boulevard	AM	0.547	A	0.548	A	0.001	No
	PM	0.500	A	0.502	A	0.002	No
3. Pine Avenue at Ocean Boulevard	AM	0.532	A	0.538	A	0.006	No
	PM	0.674	B	0.679	B	0.005	No
4. Pine Avenue at Seaside Way	AM	0.400	A	0.404	A	0.004	No
	PM	0.477	A	0.485	A	0.008	No
5. Pine Avenue at Shoreline Avenue	AM	0.352	A	0.360	A	0.008	No
	PM	0.510	A	0.510	A	0.000	No
6. Locust Avenue at Ocean Boulevard	AM	0.458	A	0.471	A	0.013	No
	PM	0.473	A	0.490	A	0.017	No
7. Long Beach Boulevard at Ocean Boulevard	AM	0.517	A	0.521	A	0.004	No
	PM	0.483	A	0.486	A	0.003	No
8. Alamitos Avenue/Shoreline Drive at Ocean Boulevard	AM	0.746	C	0.756	C	0.010	No
	PM	**0.902**	**E**	**0.902**	**E**	0.000	No

Notes:
- **Bold ICU/LOS values** indicate adverse service levels based on City LOS standards; s/v = seconds per vehicle (delay)

[9] A significant project impact is defined as a 0.020 or greater increase in ICU value of a signalized intersection or a 2% or more increase in delay at an unsignalized location where the final level of service is LOS E or LOS F.

TABLE 8-2
YEAR 2017 CUMULATIVE PLUS PROJECT PEAK HOUR INTERSECTION CAPACITY ANALYSIS

Key Intersections	Time Period	(1) Existing Traffic Conditions		(2) Year 2017 Cumulative Traffic Conditions		(3) Year 2017 Cumulative Plus Project Traffic Conditions		(4) Project Significant Impact[10]	
		ICU/HCM	LOS	ICU/HCM	LOS	ICU/HCM	LOS	Increase	Yes/No
1. Golden Shore at Ocean Boulevard	AM	0.517	A	0.537	A	0.538	A	0.001	No
	PM	0.632	B	0.666	B	0.667	B	0.001	No
2. Pacific Avenue at Ocean Boulevard	AM	0.547	A	0.575	A	0.577	A	0.002	No
	PM	0.500	A	0.528	A	0.530	A	0.002	No
3. Pine Avenue at Ocean Boulevard	AM	0.532	A	0.579	A	0.585	A	0.006	No
	PM	0.674	B	0.744	C	0.749	C	0.005	No
4. Pine Avenue at Seaside Way	AM	0.400	A	0.437	A	0.441	A	0.004	No
	PM	0.477	A	0.559	A	0.564	A	0.005	No
5. Pine Avenue at Shoreline Avenue	AM	0.352	A	0.396	A	0.408	A	0.012	No
	PM	0.510	A	0.566	A	0.566	A	0.000	No
6. Locust Avenue at Ocean Boulevard	AM	0.458	A	0.475	A	0.489	A	0.014	No
	PM	0.473	A	0.495	A	0.512	A	0.017	No
7. Long Beach Boulevard at Ocean Boulevard	AM	0.517	A	0.540	A	0.544	A	0.004	No
	PM	0.483	A	0.506	A	0.510	A	0.004	No
8. Alamitos Avenue/Shoreline Drive at Ocean Boulevard	AM	0.746	C	0.811	D	0.820	D	0.009	No
	PM	**0.902**	**E**	**0.960**	**E**	**0.966**	**E**	0.006	No

Notes:

- **Bold ICU/LOS values** indicate adverse service levels based on City LOS standards; s/v = seconds per vehicle (delay)

[10] A significant project impact is defined as a 0.020 or greater increase in ICU value of a signalized intersection or a 2% or more increase in delay at an unsignalized location where the final level of service is LOS E or LOS F.

9.0 SITE ACCESS EVALUATION

As mentioned previously, access to the proposed project site will be provided via one full access, gated unsignalized driveway located along Locust Avenue.

Table 9-1 summarizes the intersection operations at the project driveway for near-term (Year 2017) traffic conditions at completion and full occupancy of the proposed Project. The operations analysis for the project driveway is based on the *Highway Capacity Manual 2000* (HCM 2000) unsignalized methodology. Review of *Table 9-1* shows that the project driveway is forecast to operate at acceptable LOS A during the AM and PM peak hours for Year 2017 traffic conditions. As such, project access will be adequate. Motorists entering and exiting the Project site will be able to do so comfortably, safely, and without undue congestion.

Appendix D presents the level of service calculation worksheets for the two project driveways.

TABLE 9-1

PROJECT DRIVEWAY PEAK HOUR INTERSECTION CAPACITY ANALYSIS

Key Intersections	Time Period	(1) Year 2017 Cumulative Plus Project Traffic Conditions	
		HCM	LOS
1. Locust Avenue at Project Driveway	AM	8.8 sec/veh	A
	PM	8.9 sec/veh	A

10.0 RECOMMEND IMPROVEMENTS

10.1 Existing Plus Project Traffic Conditions

The results of the intersection capacity analysis presented previously in *Table 8-1* shows that the proposed Project will not significantly impact any of the eight (8) key study intersections under the "Existing Plus Project" traffic scenario. Given that there are no significant project impacts, no improvements are required under this traffic scenario.

10.2 Year 2017 Plus Project Traffic Conditions

The results of the intersection capacity analysis presented previously in *Table 8-2* shows that the proposed Project will not significantly impact any of the eight (8) key study intersections under the "Year 2017 Plus Project" traffic scenario. Given that there are no significant project impacts, no improvements are required under this traffic scenario.

10.3 Project-Specific Improvements

The following improvements are recommended to ensure that adequate ingress and egress to the project site is provided:

- Install a "STOP" sign and stop bar at the project driveway on Locust Avenue.

11.0 CONGESTION MANAGEMENT PROGRAM COMPLIANCE ASSESSMENT

The Congestion Management Program (CMP) was created statewide as a result of Proposition 111 and has been implemented locally by the Los Angeles County Metropolitan Transportation Authority (LACMTA). The CMP for Los Angeles County requires that the traffic impact of individual development projects of potential regional significance be analyzed. A specific system of arterial roadways plus all freeways comprise the CMP system.

11.1 Traffic Impact Review

As required by the current *Congestion Management Program for Los Angeles County*, a review has been made of designated monitoring locations on the CMP highway system for potential impact analysis. Per CMP TIA criteria, the geographic area examined in the TIA must include the following, at a minimum:

- All CMP arterial monitoring intersections, including freeway on and off-ramp intersections, where the project will add 50 or more trips during either the AM or PM weekday peak hours.

- Mainline freeway-monitoring stations where the project will add 150 or more trips, in either direction, during the AM or PM weekday peak hours.

11.1.1 *Intersections*

The following CMP intersection monitoring location in the project vicinity has been identified:

CMP Station	Location
No. 33	Alamitos Avenue at Ocean Boulevard

As stated earlier, the CMP guidelines require that arterial monitoring intersection locations must be examined if the proposed project will add 50 or more trips during either the AM or PM weekday peak hours (of adjacent street traffic) at CMP monitoring intersections. Based on the proposed project's trip generation potential, trip distribution and trip assignment, the Project will not add 50 or more trips at the identified CMP intersection during the weekday AM peak hour or PM peak hour. Therefore a CMP intersection traffic impact analysis is not required.

11.1.2 *Freeways*

The following CMP freeway monitoring location in the project vicinity has been identified:

CMP Station	Location
No. 1078	I-710, north of Junction Route 1 (PCH), Willow Street

As stated earlier, the CMP TIA guidelines require that freeway monitoring locations must be examined if the proposed Project will add 150 or more trips (in either direction) during either the AM or PM weekday peak periods. Based on the project's trip generation potential and distribution pattern, the proposed Project will not add more than 150 trips during the AM or PM peak hour at this

CMP mainline freeway-monitoring location. Therefore, a CMP freeway traffic impact analysis is not required.

11.2 Transit Impact Review

As required by the current *Congestion Management Program for Los Angeles County*, a review has been made of the potential impacts of the project on transit service. As previously discussed, a number of transit services exist in the project area, necessitating the following transit impact review.

The project trip generation, as shown in *Table 5-1*, was adjusted by values set forth in the CMP (i.e. person trips equal 1.4 times vehicle trips and transit trips equal 3.5 percent of the total person trips) to estimate project-related transit trip generation. Pursuant to the CMP guidelines, the proposed Project is forecast to generate 3 transit trips (1 inbound and 2 outbound) during the AM peak hour and 3 transit trips (2 inbound and 1 outbound) during the PM peak hour. Over a 24-hour period the proposed Project is forecasted to generate 37 daily weekday transit trips.

It is anticipated that the existing transit service in the project area would be able to accommodate the project generated transit trips. Long Beach Transit (LBT) Route No's. 51, 61, 71, 72, 111, 112, 181 and 182, Metro Blue Line/Local Line No. 232 and LADOT Commuter Express 142 currently serve the surrounding vicinity. Therefore, given the number of transit trips generated by the project and the existing transit routes in the project vicinity, it is concluded that the existing public transit system would not be significantly impacted by the proposed Project.

12.0 SUMMARY OF FINDINGS AND CONCLUSIONS

- ***Project Description*** – The Project site is a 0.67± acre rectangular-shaped parcel of land, now developed with surface parking spaces that is located north of Seaside Way between Locust Avenue and Collins Way in the City of Long Beach, California. The project site is located in the Downtown Shoreline Planned Development District (PD-6).

  The proposed Project will consist of a five story apartment podium with a total of 113 apartment homes consisting of 53 studio units, 33 one-bedroom/1 or 1.5 bath units, and 27 two-bedroom/2 bath units over a three-level garage with a total of 144 parking spaces. An additional 32 spaces will be provided off-site for use by the Project. On-site facilities/amenities of the proposed Project include a leasing office, a lounge/lobby, a fitness center for residents and a roof top deck with spa, fire pits and barbeque areas. The Project is expected to be completed by the Year 2017 and is assumed to be completed in one phase.

  Access to the proposed project site will be provided via one full access, gated unsignalized driveway located along Locust Avenue.

- ***Study Scope*** – The following intersections were selected for detailed peak hour level of service analyses under Existing Traffic Conditions, Existing Plus Project Traffic Conditions, Year 2017 Cumulative Traffic Conditions and Year 2017 Cumulative plus Project Traffic Conditions:

  1. Golden Shore at Ocean Boulevard
  2. Pacific Avenue at Ocean Boulevard
  3. Pine Avenue at Ocean Boulevard
  4. Pine Avenue at Seaside Way
  5. Pine Avenue at Shoreline Avenue
  6. Locust Avenue at Ocean Boulevard
  7. Long Beach Boulevard at Ocean Boulevard
  8. Alamitos Avenue/Shoreline Drive at Ocean Boulevard[11]

- ***Study Scope*** – The analysis is focused on assessing potential traffic impacts during the morning and evening commute peak hours (i.e. between 7:00-9:00 AM, and 4:00-6:00 PM) on a typical weekday.

- ***Existing Traffic Conditions*** – One of the eight (8) key study intersections currently operates at an unacceptable level of service during the PM peak hour. The intersection of Alamitos Avenue/Shoreline Drive at Ocean Boulevard currently operates at unacceptable LOS E during the PM peak hour. The remaining seven key study intersections currently operate at acceptable levels of service during the AM and PM peak hours.

[11] Los Angeles County CMP Intersection No. 33.

- ***Project Trip Generation*** – The proposed Project is forecast to generate approximately 751 daily trips, with 58 trips (11 inbound, 47 outbound) produced in the AM peak hour and 70 trips (45 inbound, 25 outbound) produced in the PM peak hour on a typical weekday.

- ***Cumulative Projects Trip Generation*** – Ten (10) cumulative projects were considered as part of the cumulative traffic analysis. On a typical weekday, the ten (10) cumulative projects are expected to generate a combined total of 13,479 daily trips on a "typical" weekday, with 830 trips (301 inbound and 529 outbound) forecast during the AM peak hour, and 1,180 trips (653 inbound and 527 outbound) forecast during the PM peak hour.

- ***Existing Plus Project Traffic Conditions*** – The proposed Project ***will not*** significantly impact any of the eight (8) key study intersections, when compared to the LOS standards and significant impact criteria specified in this report. Although the intersection of Alamitos Avenue/Shoreline Drive at Ocean Boulevard is forecast to operate at unacceptable LOS E during the PM peak hour with the addition of project traffic, the proposed Project is expected to add less than 0.020 to the ICU value. The remaining seven key study intersections are forecast to continue to operate at an acceptable LOS with the addition of Project generated traffic to existing traffic.

- ***Year 2017 Cumulative Plus Project Traffic Conditions*** – The proposed Project ***will not*** significantly impact any of the eight (8) key study intersections, when compared to the LOS standards and significant impact criteria specified in this report. Although the intersection of Alamitos Avenue/Shoreline Drive at Ocean Boulevard is forecast to operate at unacceptable LOS E during the PM peak hour with the addition of project traffic in the Year 2017, the proposed Project is expected to add less than 0.020 to the ICU value. The remaining seven key study intersections are forecast to continue to operate at an acceptable LOS with the addition of Project generated traffic in the Year 2017.

- ***Site Access Evaluation –*** The proposed project driveway is forecast to operate at acceptable LOS A during the AM and PM peak hours for Year 2017 traffic conditions. As such, project access will be adequate. Motorists entering and exiting the Project site will be able to do so comfortably, safely, and without undue congestion.

- ***Recommended Improvements –*** The results of the intersection capacity analysis presented previously in *Tables 8-1* and *8-2* shows that the proposed Project will not significantly impact the eight (8) key study intersections under the "Existing Plus Project" and "Year 2017 Plus Project" traffic scenarios. Given that there are no significant project impacts, no intersection improvements are required of the proposed project.

- ***Project Specific Improvements –*** The following improvements are recommended to ensure that adequate ingress and egress to the project site is provided:

    - Install a "STOP" sign and stop bar at the project driveway on Locust Avenue.

- ***Congestion Management Program (CMP) –*** No significant impacts are expected to occur on the Los Angeles County Congestion Management Program roadway network due to the development and full occupancy of the proposed Project.